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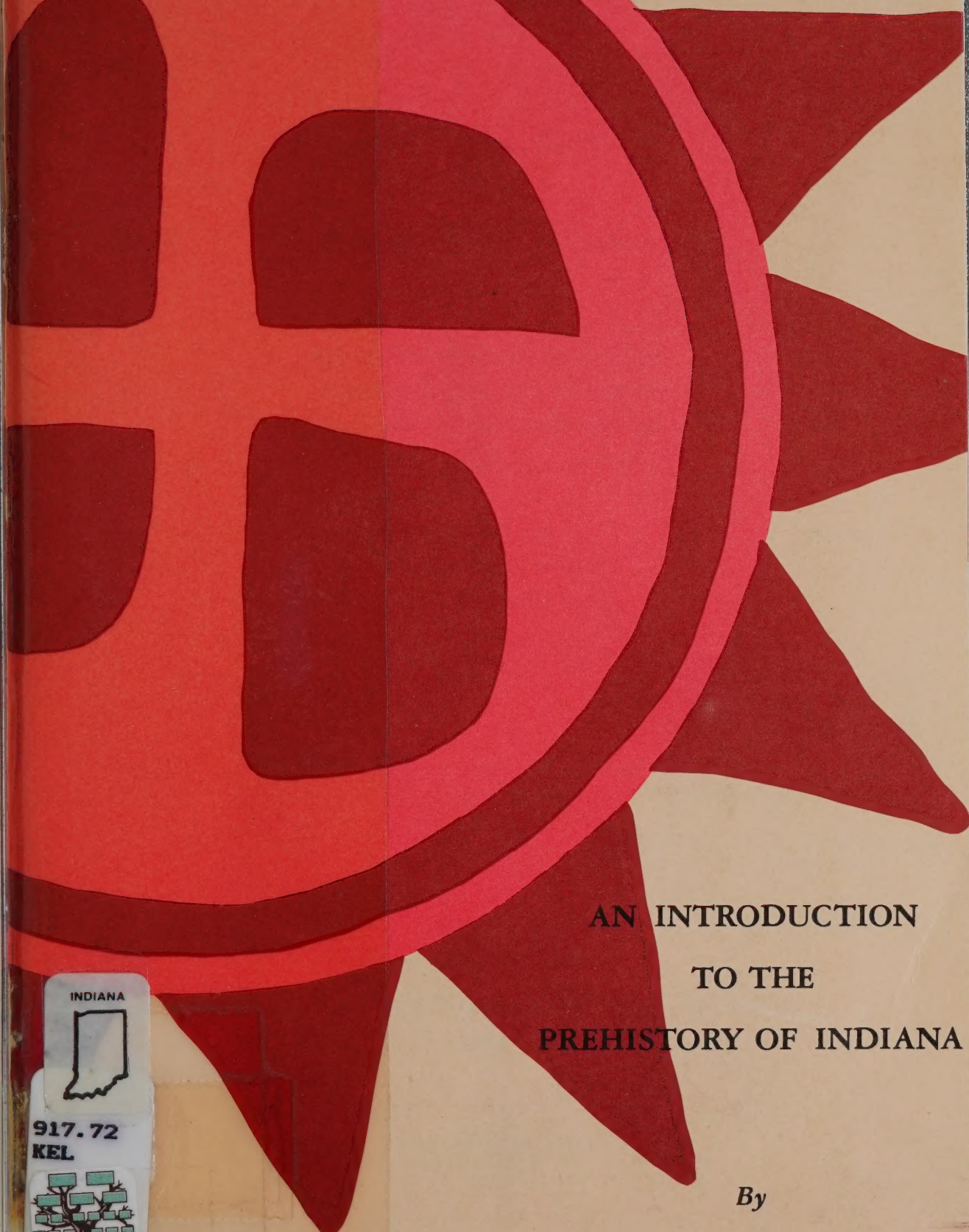

AN INTRODUCTION TO THE PREHISTORY OF INDIANA

By

JAMES H. KELLAR

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Acknowledgments

It is particularly gratifying that the first edition of *An Introduction to the Prehistory of Indiana* (1973) was so well-received that a second edition is warranted. The ten-year interval has seen a continuing growth in Indiana archaeology and, while the text of the new parallels that of the old, it has been modified to reflect some of the changes.

I wish to express my appreciation for information and assistance from several colleagues: Cheryl A. Munson, Robert Pace, and B. K. Swartz, Jr. Also, the many representatives from the Wabash Valley Archaeological Society and Indianapolis Amateur Archaeological Association have helped to make this a worthwhile personal venture.

The figures were prepared by Rosie Meer, and I am indebted to her. Photographs were provided by the Indiana University News Bureau and the Glenn A. Black Laboratory. Osborne 1 made the manuscript preparation much simpler.

Finally, it is with gratitude and a sense of debt that I acknowledge the many contributions of J. C. Householder. For more than fifty years he has pursued an avocational interest and in the process has made numerous additions to our knowledge of prehistoric man in Indiana.

JAMES H. KELLAR
Archaeologist, Indiana Historical Society
Director, Glenn A. Black Laboratory
of Archaeology

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Introduction

An Introduction to Indiana Prehistory is written in order to make available in summary form some of the answers to commonly asked questions about Indiana archaeology and prehistory. The impetus for it derives from the almost daily inquiries archaeologists receive from a varied public, for which archaeology and the numerous evidences of Indian occupation in the state have some attraction. Most commonly it is desired to have an object identified to determine whether it is natural or man-made, and if the latter, for what it was used, how old it is, and what Indian group made it. The accidental discovery of human burials or the evaluation of a possible Indian mound often involves an archaeologist. Young students request information for inclusion in a class project or to plan programs of study leading to a career in archaeology. Teachers planning field trips and class study units seek out archaeological exhibits on occasion or desire a few artifacts for use in the classroom. In order to complement further an interest in area prehistory, reading lists are requested. And Indiana's businesses with great frequency consult archaeologists in order to comply with federal and state laws affecting construction projects that may destroy Indian mounds and villages.

A major portion of the text summarizes in a brief form what is currently known of the prehistoric Indian occupation in our state. While an effort has been made to avoid technical terms, it is inevitable that some are used. Because state boundaries are recent, artificial inventions when contrasted with the thousands of years with which we will be concerned, the discussions will extend beyond the limits of Indiana in order to provide a fuller context for understanding Indiana sites and materials. However, reference is made to Indiana sites and publications in every instance. Because most archaeological work has been accomplished in the southern portion of the state, that region is emphasized. Pottery and projectile point forms are commonly used to describe individual cultures because they are items most frequently encountered in the field.

Also included is a brief discussion concerning the history of archaeological research in the state, a bibliography for those desiring to pursue some of the topics in greater depth, a statement regarding university degree programs, and a list of prehistoric sites and museums accessible to the public.[1]

It is hoped that this brief overview of Indiana archaeology can provide information of interest. It is also aimed at helping to create some greater awareness of the richness of the American Indian past and increase an appreciation of the diminishing resources for understanding that past. The latter is of real importance because the continuing changes in land usage throughout the state and indiscriminate destruction mean that most, if not all, Indian villages and mounds will have disappeared within a few decades. And an essential portion of mankind's history will be forever lost.

1. An extensive bibliography on Indiana archaeology is contained in the following: Michael (1969), Swartz (1974), and Akard (1979).

The American Indian Heritage

All too frequently in an understandable but ethnocentric concern for our own lives and the problems associated with living in the present it is forgotten that what is now Indiana had been occupied for thousands of years prior to the appearance of the first Europeans. Yet the contributions to contemporary life made by the first occupants, the American Indians, are inescapable to even the most casual observer, although Indian societies in our area have long since been decimated.

The names of our state and capital city are obvious reminders of the Indian peoples who once lived here, and the designations of the four neighboring states are even more directly derived from Indian cultures. Reference to a map of Indiana reveals an abundance of place names having comparable origins. For example, there are Miami, Tippecanoe, Ohio, and Wabash counties. The Wabash, Ohio, Tippecanoe, Kankakee, Maumee, Mississinewa, Salamonie, and Iroquois rivers and such lakes as Manitou, Wawasee, and Maxinkukee all reflect the Indian heritage. Kewanee, Mishawaka, Nappanee, Osceola, Wanatah, Wawaka, Wawpecong, and Winamac are among the colorful names of the communities that have a similar derivation.

But the native peoples also made nearly incalculable contributions in even more fundamental ways, particularly to the economic well-being of the state and nation. The vast acreage in corn, the leadership in popcorn production, the contract tomato crop in the north, and tobacco in the south all depend upon plant products originally domesticated by the American Indian. To this list can be added such common plant foods as the "Irish" potato, sweet potato, squash, pumpkin, many varieties of beans and peppers, and sunflowers. It has been estimated that as much as 50 percent of the world's agricultural wealth derives from plant products first cultivated by the Indian and which were totally unknown in the Old World until after the settlement of the New beginning in A.D. 1492.

American Indian influences have impacts in other ways as well, particularly in literature, cinema, and television. Unfortunately, these customarily rely upon the Indian-European settlement conflicts or sentimentalize a "man in nature" theme with the result that the contrived events too frequently convey stereotypes or have little relationship to actual happenings.

In any case, the early documentary history of the United States, as well as much of the recent, would have been markedly different had there been no human antecedents to contest the European claim to what was erroneously called a "virgin wilderness." It was no such thing to the Indian whose ancestors had lived in the Americas for thousands of years adapting to its varied environments, founding in some areas cities that rivaled Old World communities in size and complexity, and creating life-styles that have influenced the present in fundamental ways.[2]

However, because writing systems appear never to have developed providing a medium for transmitting "history," other methods must be employed to gain an understanding of this ancestry.

2. Driver (1961:583-612) provides an extended discussion of American Indian contributions and achievements.

Prehistory and Archaeology

The terms "prehistory" and "archaeology" are employed many times in the pages that follow, and a short description of their usage is appropriate.

Prehistory refers to that interval in human existence prior to the invention or introduction of written records. Man and his immediate ancestors have existed for hundreds of thousands of years, yet writing is a relatively recent development with a time span not much in excess of 5,000 years. In the Near East, where writing was first used, prehistory ends at that time. In the New World (North, South, and Central America), it was not until Europeans arrived bringing with them literacy that prehistory ends. And it was late in the seventeenth century that what was to become Indiana is represented in the literature in any substantial detail. Therefore, prehistory ends and history begins at different times in different world areas.

It is readily apparent that the prehistoric interval is a very long one, indeed, and if we were totally dependent upon written documents for understanding the past, then that understanding would necessarily be confined to a few thousand years for a very limited portion of the world and only a few centuries for most of it. However, an almost innate inquisitiveness has led to the development of additional ways of learning about the human past that transcend the limits imposed by the absence of writing. Probably the most important and fruitful of these methods is archaeology, an ever-increasing body of methods and techniques designed to identify, recover, and interpret the surviving cultural and physical evidence.

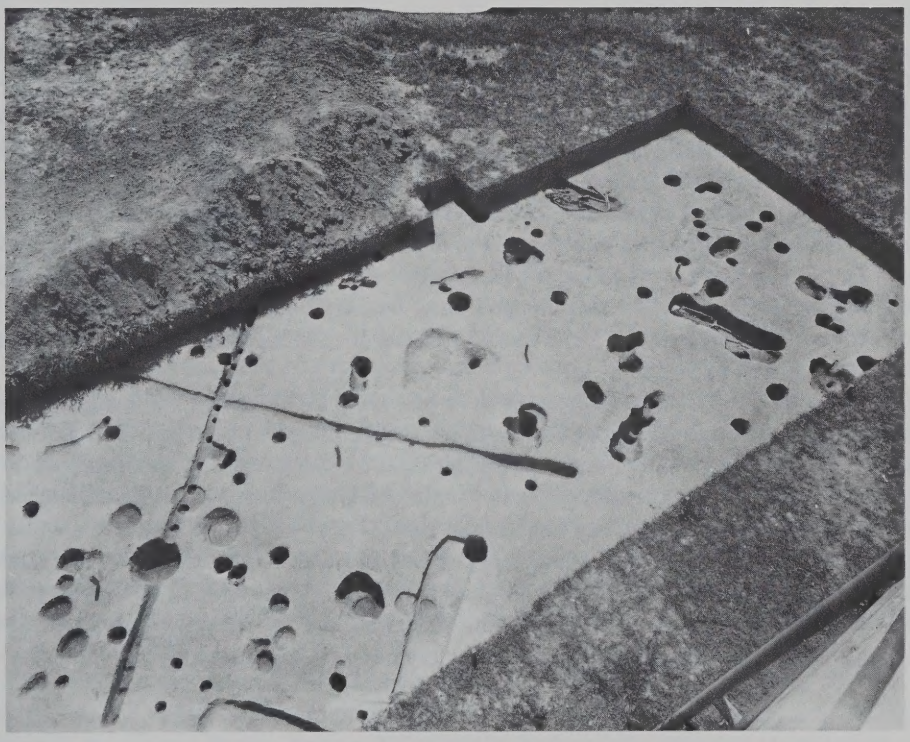
Summarizing, "prehistory" has reference to that period in human existence before the invention of writing systems. "Archaeology" is a scientific activity designed to obtain knowledge about human life and culture during that long time interval.

As one might suppose, an absence of contemporary written records, despite the potential of archaeology, imposes some serious limitations on the kinds of information recoverable through excavation. It is uncommon to gain much of an understanding of the details of an individual life or specific events, both of which are hallmarks of historic inquiry. Similarly, it is possible only in special cases to identify ethnic groups or the languages spoken. The details of social organization, political organization, and religious ritual, among other social attributes, may be only dimly perceived, if at all, because the materials that survive are often insufficient to document such practices. Readers need only recall their own activities and conjecture what will survive a few centuries for the archaeologist's use and wonder how these fragments might be interpreted should no written records survive. Much of our daily existence involves verbal behavior and actions that are ultimately based upon knowledge, values, experience, and belief, and none of these survives directly. Although we are literally surrounded by a wealth of material objects and structures, only a few persist a lifetime given the best of conditions.

Despite these limitations, archaeologists are able to reconstruct the broad picture of cultural development and change through time and comprehend some of the conditions that produced

them. Further, through a study of living societies, both contemporary and those from the recent past, some meaningful inferential insights into life of prehistoric societies can be obtained. The recovered materials that assist in this quest may include manufactured objects (artifacts), remnants of plants and animals originally used for food (ecofacts), evidence for architecture, cemeteries, raw material resources, and the spatial distribution of any or all of these. Meticulous excavation in the contexts (sites) where these occur and careful recording of the relationships (horizontal and vertical placement) of the materials encountered provide the data whereby an otherwise silent past is permitted to speak.

The ability to place prehistoric materials in their proper chronological order and assign at least an approximation of calendar dates is an important consideration for most problems encountered by archaeologists, yet it is implicit in the idea of prehistory that no such contemporary records exist. While some suggestions of relative time placement may be derived by observing the position of materials in the ground (e.g., deeper artifacts might be earlier than less deeply buried ones at the same site), or assuming that similar artifacts encountered in different site situations



An Orderly Archaeological Excavation

must reflect the same time interval, or concluding that simpler technologies must predate more complex ones, none of these provides a time perspective capable of being expressed in calendrical terms.

It remained for the development of the carbon-14 dating procedure in 1950 to make available a widely applicable method for resolving some of the chronological problems. Because ^{14}C

provides most of the chronological insights in the text and is often cited in popular publications, a brief comment concerning the method is included so that the reader may more readily understand its significance.

Carbon-14 is an isotope of carbon which is radioactive. Therefore, given a finite quantity of the isotope, the level of radioactivity will decrease over a period of time at a more or less constant rate. It has been determined that in 5,730 years the level of radioactivity will have diminished by one half. It was an original assumption that this natural decrease was countered by an equal increase occasioned by the constant creation of the isotope in the upper atmosphere; therefore, the levels of ^{14}C maintained an equilibrium in the environment. Further, it was thought that this equilibrium had been maintained at the same level over long periods of time. This latter assumption has been questioned, however.

All plants and animals, by reason of their participation in the life processes, incorporate carbon-14 at the same levels as that existing in the environment. However, upon the death of the entity, the isotope is no longer assimilated and only radioactive decay occurs. Since the ^{14}C levels in living material are known and the rate of decay has been determined, it remains only to measure the difference in the radiocarbon level of the unknown sample to assess when it ceased to participate in the life process. That is, the difference between the two ^{14}C levels is a measure of the time elapsed since the "death" of the specimen.

Materials such as charred wood, bone, and shell can be dated using the radiocarbon method. About 50,000 years is its limit. Because datable materials are commonly recovered from prehistoric sites and the useful time span more than covers the period of human occupancy in the New World, carbon-14 is widely applicable to the solution of chronological problems.

Although the method produces a result that is expressed as the equivalent of a calendar date, in point of fact, this is not the case. The reasons for this are too complex for inclusion in this brief summary, but what is produced is an average "date" and a plus and minus range of years (e.g., 500 $\pm$ 50 B.C.). This means that there is a 67 percent chance that the "true" date falls within the given plus and minus range.

Further, some of the original assumptions have proven to be incorrect. For example, it is now confirmed that past levels of atmospheric carbon-14 have not been constant, though correction tables are now available to adjust for this error during the most recent few thousand years. Also, not all materials incorporate the isotope in the same concentrations. What is produced, then, is a probability statement, not a precise calendrical date.

Despite the foregoing strictures, carbon-14 dating does provide reasonably accurate time estimates, and its application to archaeological problems, beginning in 1950, succeeded in bringing about a revolution in the field. For the first time, prehistorians were able to view their data with a greater sense of absolute time than had been possible heretofore.

Archaeology in Indiana

A formal archaeological interest in Indiana prehistory can be identified at least as early as 1827, but the long-term commitment to the study of this important segment of the state's past is a much more recent accomplishment. For example, it was not until 1931 that a full-time archaeologist was employed by a state institution, the Indiana Historical Society, and it would be more than a decade later before American archaeology would be added to university curricula: Indiana University (1944), Ball State University (1964), Indiana State University (1964), University of Notre Dame (1970), and IUPU-Fort Wayne (1981). Purdue University has an archaeological program, but North America is not a part of its concentration.

Until about 1928, the concern for area prehistory was largely antiquarian in nature and lacked consistent institutional support. What survives from that earlier era is fragmentary and often tantalizing but is inevitably meager. Nevertheless, these early published accounts constitute an interesting and often useful record, not just concerning the sites themselves, but as they reflect the more general developments leading to contemporary archaeology. Therefore, it is useful to consider briefly the history of archaeology in Indiana before proceeding to the summary of current knowledge (see also Black 1961; Michael 1976; Ruegamer 1980).

As a consequence of the Ordinance of 1787, portions of what were to become Indiana were first investigated by deputy United States surveyors. It was one of their tasks to establish the land survey system that continues to be employed to the present. In addition to establishing section lines and corners, they were ordered to assess the developmental potential of the lands traversed by noting both natural and cultural features. Among these latter were archaeological sites and other evidence of Indian utilization. For example, "Bone Bank," a large prehistoric village located about ten miles above the mouth of the Wabash River in Posey County, is described. Already under attack by the meandering river in the very early part of the nineteenth century, only scattered bits of cultural debris survive to mark its presence today. However, when it was first noted, the abundance of shell, human and animal bone, pottery, and other materials exposed on the riverbank drew the attention of river travelers, for whom the site served as a convenient and oft-described landmark.

The Robert Owen purchase of New Harmony brought with it the well-known "Boat Load of Knowledge" and an interval when some of the first reasonably systematic archaeology was undertaken in the United States. Among the scientific and socially conscious individuals at New Harmony in the 1820s was Charles Alexander Lesueur, a French naturalist and artist. Intrigued by the evidence for earlier settlement in the area, he initiated excavation of a few of the mounds and noted that some had already been dug into at that early date. His work has been evaluated as follows (Black 1961:52-53):

> . . . the important thing about Lesueur's work is that he excavated correctly! He kept notes and made sketches. He recognized important interior features. He

> made mineralogical identification of the stones used by the aborigines for artifact fabrication. He attempted to place these lithic materials in their proper time perspective by assigning them to the geological levels from which they had been quarried. He attempted to make comparisons and interpretations from the crania and other human skeletal parts which he found or were made available to him. He gave a detailed description of "Bone Bank" and described material from there in such a way that we can identify . . . Middle Mississippi.

As late as 1831 archaeological investigations were conducted by the New Harmony interest group, and in 1833 artifacts collected there were returned to Europe by Maximilian, Prince of Wied (1906:172-78), who was engaged in a trip to the source of the Missouri River.

This period of intense archaeological activity in New Harmony does not appear to have engendered a continuing concern or more extensive interest in the innumerable sites in the area or beyond. Local newspapers throughout the growing state sometimes carried accounts of accidental discoveries or reported on weekend digs by local citizens, but much of what must have been discovered is unknowable. The New Harmony interest group, though one of the earliest of its kind in the eastern United States, did not make a lasting contribution to a better understanding of state prehistory.

The many large and intricate earthwork complexes and the impressive assemblage of artifacts recovered from burial mounds in southern Ohio generated substantial interest and field activity in that state at a relatively early date. An inability to relate the finds to the cultures of the known American Indians in the area gave rise to many fanciful interpretations, some of which have been remarkably persistent. One that can be encountered to this day is that the earthworks were constructed by an unusually cultured group of "Mound Builders," who were subsequently driven out by the American Indian, a culturally inferior society. Silverberg (1968) has written a highly readable account of these interpretive controversies.

While much work was going on in Ohio, Indiana sites, though some were of equal size and complexity, if not in numbers, did not receive comparable attention. For example, the important early survey by Ephraim G. Squier and Edward H. Davis reported in *Ancient Monuments of the Mississippi Valley* (1848) makes reference only to a group of earthworks in the extreme eastern portion of the state in Randolph County (Pl. XXXIII). The authors were apparently unaware of the more striking earthwork complexes nearby in the vicinity of Anderson and New Castle.

Much of the impetus for a more substantial interest in state archaeology must be credited to the Indiana Geological Survey. Beginning with its founding in 1869, the Survey had as a primary objective the assessment of economically important mineral resources in each of the counties in the state; but the individual geologists often had broad interests in natural and cultural history as well. Hence, the county geological surveys published during the last decades of the nineteenth century commonly included descriptions of the more notable Indian sites and other information of interest to prehistorians, i.e., chert. Edward J. Cox, John Collett, Sylvester Gorby, Moses Elrod, and Dr. Rufus Haymond all contributed to this effort.

It was during this same period that a few Indiana sites occupied the attention of archaeologists with national reputations. Frederick W. Putnam, director, Peabody Museum of American Archaeology and Ethnology, Harvard University, visited a "fortified" site in Sullivan County accompanied by geologists Collett and Cox. Some excavation was accomplished and Putnam subsequently published two reports concerning the work at the Merom Site (1871, 1872).

In 1882, Cyrus Thomas was placed in charge of a monumental federal archaeological program

funded by the Bureau of American Ethnology, the purpose of which was to resolve once and for all time the cultural and historical problems posed by the numerous mounds in the eastern United States and, particularly, what group was responsible for their construction. Information was accumulated in Washington, D.C., from published and personal sources, and individuals were sent into the field to do surveys and undertake excavations. Even at this time federal programs were viewed with suspicion and many nonarchaeological problems impeded the progress of the project, but much of lasting value was accumulated. Thomas's *Catalogue of Prehistoric Works East of the Rocky Mountains* (1891) lists many sites in Indiana, though the listing is largely a compilation derived from Indiana Geological Survey reports with the addition of information from local informants. The *Report on the Mound Explorations of the Bureau of American Ethnology* (Thomas 1894), a major project publication, published the first map of Angel Site (Vanderburgh County) and described some of the features at the site (556-60). Also discussed were contexts in LaPorte (555), Knox (556), and Sullivan (555-56) counties.

Perhaps the first major excavation in Indiana for which notes and collections are yet available occurred in the fall of 1898, in Posey County at the "Mouth of the Wabash" site. The field work was accomplished by Clifford Anderson under the direction of Warren K. Moorehead, a pioneer figure in the history of archaeology and an individual who was to play a critical role in Indiana archaeology at a later date. Support for the work was provided by the Robert S. Peabody Foundation, Phillips Academy, Andover, Massachusetts. The results of the project were significant, and a substantial collection of artifacts and other data was recovered (Moorehead 1906:62-86; Adams 1949:25-47; Green and C. Munson 1978:293-330). The notes and collections are maintained in the Glenn A. Black Laboratory of Archaeology, Indiana University, Bloomington.

Somewhat later, that inveterate archaeological traveler, C. B. Moore, sent his agents into southwestern Indiana to determine whether there were sites sufficiently important to warrant his attention. There being none, only a large platform mound was recorded (Moore 1916:491).

Though Indiana archaeological sites received some notice from institutions outside the state and a few papers appeared in publications having a national distribution, much of the accomplishment during the late nineteenth and early twentieth centuries was reported in local sources, i.e., county histories, geological surveys, and Indiana Academy of Science *Proceedings*. Since problems of chronology and cultural groupings had not been addressed in any substantial fashion at this time, most of the reports were necessarily descriptive in nature and dealt with individual sites or noteworthy discoveries. *The Hoosier Mineralogist and Archaeologist* provided a publication outlet, and the Indiana Academy of Science offered a forum for interested parties.

Except for Ohio where archaeology had a long history of institutional support, Indiana's situation was not unlike that in its neighboring states. But the situation was to change.

In 1918, the National Research Council through its Division of Anthropology and Psychology, recognizing the fragmented nature of archaeology in the United States, determined to stimulate the creation of state programs. The aims were to encourage local groups to take the initiative in assessing site resources, provide programmatic advice as to how this might best be accomplished, and sponsor regional conferences in order to bring together state archaeological leaders to discuss shared interests. In Indiana, the program was introduced at a meeting of the Indiana Academy of Science in 1920 by Amos W. Butler, an Academy director, who had had a long interest in state prehistory.

During the decade a number of state organizations co-operated at various times on a number

of projects. Foremost among these was the Indiana Historical Commission, later to become the Indiana Historical Bureau, an agency of state government. In 1926 the Indiana Historical Society established an archaeological section chaired by William R. Teel. Representatives from the section attended a number of regional meetings, reviewed the programs in other states, assisted in gaining financial support for work in Indiana, and ultimately provided the organizational framework for employing a professional staff.

The first modern excavation was that undertaken at the Albee Mound in Sullivan County in 1926 and 1927 (MacLean 1927, 1931). The work was directed by J. Arthur MacLean, director of the John Herron Art Institute, and supported by the Division of Geology of the State Department of Conservation, Indiana Historical Society, Indiana Historical Bureau, and private donors. The mound was not an artificially constructed tumulus but a natural elevation in which a number of prehistoric burials had been placed; the excavation succeeded in identifying one of the major cultural complexes in the Wabash Valley.

There were no educational institutions in Indiana training archaeologists in the late 1920s and few anywhere in the United States for that matter, but the University of Chicago had initiated such a program. Therefore, the first professional archaeologists to be employed by the Indiana groups were graduate students from that program. In 1928 and 1929, Frank M. Setzler, later to become Curator of Anthropology, United States National Museum, carried on survey and excavation in southeastern Indiana in the Whitewater Valley (Setzler 1930, 1931). This area was chosen because of its nearness to the state of Ohio and the suggestion that some of the sites in the valley were related to the spectacular earthworks there. In the following years, Fred Eggan and J. Gilbert Allison undertook similar projects in Hamilton, Marion, Morgan, and Porter counties (McAllister 1932). However, as productive and promising as these projects were in identifying sites and arousing public interest, they did not immediately result in obtaining the services of a trained archaeologist on a full-time basis but represented only seasonal activities.

The individual primarily responsible for the creation and maintenance of the modern program in state archaeology was Eli Lilly. The archaeologist who directed the program was Glenn A. Black.[3]

Lilly's interest in archaeology was initially stimulated by a visit with an artifact collector near his summer home at Lake Wawasee. Impressed with the craftsmanship represented by the objects on display and desiring to learn more about them, he began to attend the few meetings on the subject, assembled an archaeological library, and through an agent, began to accumulate an artifact collection with emphasis on Indiana materials. Also, when a burial was discovered near Lake Wawasee, he undertook an excavation of the site (Lilly 1942). In order to further expand his knowledge of the new avocation, he assembled and published a bibliography of Indiana archaeology (1932). These early years of reading and collecting culminated with the publication of *Prehistoric Antiquities of Indiana* (1937). This classic work detailed what was then known of Indiana prehistory, described some of the important sites, identified problem areas, further enlarged the bibliography, and made a plea for an expanded program of archaeological research and conservation in the state.

Black, though without formal training in archaeology, had begun to accumulate an artifact collection in 1926, read widely in the field, visited many sites, and devoted much of his time apart from his employment with an Indianapolis industrial firm to the pursuit of archaeology. Aware

3. Ruegamer (1980:255-97) provides a detailed account of Lilly-Black and state archaeology.

of the intent to create a state research program, he had volunteered his services and became known to the leaders of the effort.

Lilly and Black met in May, 1931, when the latter was invited to serve as the driver and guide for a party making a tour of some of the better-known archaeological sites in the state. Among those making the trip, in addition to Lilly, was Warren K. Moorehead, then director of the Robert S. Peabody Foundation for Archaeology, Andover, Massachusetts. As a leader of the archaeological community, his counsel was sought by the eager but inexperienced Indiana archaeological committee. Sites visited in early May included the large earthworks complex in Mounds

Glenn A. Black and Eli Lilly at Angel Mounds

State Park near Anderson, the fortified site near Merom, Bone Bank in Posey County, and Angel Mounds near Evansville. It was an informative trip for the participants and had significant consequences for the directions taken by the fledgling Indiana program.

First, Moorehead was sufficiently impressed with Black's knowledge and apparent abilities to recommend him to Lilly for an archaeological position. Therefore, almost immediately upon the conclusion of the venture, Black was employed. The appointment was initially with the Indiana Historical Bureau, but he was transferred to the Indiana Historical Society within a few months. For most of the thirty-three years he held the position, he was the only archaeologist in the state. Along with the research program he directed, he spoke extensively to lay groups, was a founder and officer in the Society for American Archaeology, the professional organization for New

World prehistorians, and beginning in 1944, taught in the Department of Anthropology, Indiana University.

A second consequence of the 1931 field trip concerned Angel Mounds, a large late prehistoric stockaded town located in the floodplain of the Ohio River in Vanderburgh County. Each member of the party was impressed with this well-preserved 100-acre site, the several platform mounds, the stockade remnants, and the abundance of cultural debris that littered the surface of the plowed field. Moorehead, who had directed excavations at comparable sites in Georgia (Etowah) and southwest Illinois (Cahokia), urged in conversation and by letter that Angel Mounds be preserved, both for its research potential and as a means of educating the public about the past. These suggestions by a respected and experienced archaeologist were taken seriously, and Lilly wrote a few years later in reference to the site (1937:46-48):

> Here, baked in the glaring summer sun, frozen under winter snows, . . . is a site that the State of Indiana should rescue from oblivion, and so save to posterity another of our pre-Columbian heritages.

In 1938, the effort to raise money from local and state sources having failed, Lilly purchased Angel Mounds in the name of the Indiana Historical Society. Glenn Black moved to a house on the property, and an association with a single archaeological site that was to span twenty-six years had begun. Throughout this period Indiana archaeology was centered in the Evansville area and much of the research energy was expended at Angel Mounds. During the years preceding World War II as many as 250 W.P.A. employees, workers supported by federally funded projects during the depression years, excavated significant sectors of the large village and one mound. Beginning in 1947, the site served as a summer archaeological field school conducted by the Indiana Historical Society and Indiana University.

Another activity generated by the Lilly-Black association had important implications for the development of anthropological research in the state and region. It centered on the interpretation of the Walam Olum, a series of mnemonic signs which reportedly were in the possession of the Delaware Indians and chronicled the movement of the Algonquian-speaking Indians from Asia into the New World. Allegedly, the record had been collected in Indiana in 1820 by Constantine S. Rafinesque. Black, after reading a paper which set out some suggestions for analyzing the time dimensions in ethnographic data, recommended to Lilly that the Walam Olum, provided there was a satisfactory translation, might serve to clarify many problems concerning the American Indian occupancy in the Ohio Valley and eastern United States. In the effort to follow up the suggestion, a multifaceted research team was assembled, including linguists, ethnologists, physical anthropologists, and archaeologists. Almost every archaeologist working in the eastern United States during the 1930s and 1940s was involved in one fashion or another, as were a number of graduate students. Also, the first anthropology department in a state institution, that established in 1947 at Indiana University, was a consequence of locating some of the project personnel in Bloomington. Also, in an effort to increase the ability of archaeologists to better understand their data, support was provided a number of ancillary activities.

In 1954, *Walam Olum or Red Score, the Migration Legend of the Lenni Lenape or Delaware Indians* was published. While there remain unanswered questions concerning the authenticity of the original documents attributed to Rafinesque and the time frame proposed is not confirmed by carbon-14 dating, a method developed after the Walam Olum research had been substantially accomplished, there is no question that archaeology was positively influenced by the financial

support and research opportunities the project afforded. Griffin (1971), summarizing Lilly's role, intellectual as well as financial, stated:

> There have been other research programs in American anthropology that have been supported by individuals, but I doubt that any had the breadth of view, the variety of personnel, or the continuity of purpose and tolerance "for professional procrastination" that was always present in these endeavors. I also doubt that the patron of any other program of this nature ever participated as fully, shared discouragement with such compassion, or exulted more with each accomplishment. It was an excellent research journey for all of us and "for the increase and diffusion of knowledge among men."

The Walam Olum project, from its beginning in 1932, required a significant long-term commitment as did that at Angel Mounds; nevertheless, a broad concern with Indiana archaeology was always apparent, most of it under Black's direction. The Indiana Historical Bureau until 1957 sponsored a number of county surveys and published the results, either in the *Indiana History Bulletin* or as special reports. However, the Indiana Historical Society was the primary institution supporting prehistorical research. It, too, was involved in some survey programs, but also contributed to numerous excavation projects. For example, in 1934 and 1935, following a period of reconnaissance in southeastern Indiana, the Nowlin Mound, a large burial tumuli located in Dearborn County, was carefully investigated. It had been the common practice to concentrate on burials and their artifact associations, largely ignoring the details of mound structure. The Nowlin Mound project, which Black directed, substantially changed that. The complex mound structure and the sequence of constructional events leading to its completion were fully documented, and there is probably no more precise description of mound architectonics in print (Black 1936). It can be read with profit by anyone interested in area prehistory.

In south-central Indiana, E. Y. Guernsey, another one of the serious amateurs who assisted in getting Indiana's program in place, excavated in a number of sites in the Jeffersonville/New Albany area.

Beginning in 1937, the Society initiated the *Prehistory Research Series,* an occasional publication devoted to anthropological monographs of relevance to the Indiana scene. The series includes, in addition to archaeology, studies in linguistics and ethnography.

An interest in archaeological methodology, both in the field and laboratory, was a recurrent theme of the Society's program from the beginning. It was initially manifested in the Nowlin Mound excavation. The support provided the tree-ring dating research at the University of Chicago, the lithic laboratory at the Ohio State Museum, and the University of Michigan's ceramic repository were also reflections of this methodological interest. At Angel Mounds, a doctoral candidate in botany, encouraged by Black, initiated research to demonstrate that human activities accomplished centuries before could be identified by noting changes in contemporary plant distributions (Zeiner 1946). Somewhat later, Lilly, after reading about a portable magnetometer useful for measuring minor variations in magnetic intensity in the soil that could result from human intervention, suggested its possible use at Angel Mounds to seek out houses, pits, stockade, etc. Therefore, an appropriate instrument was obtained and with the aid of two grants from the National Science Foundation, work was undertaken at the site and in the American Southwest (Johnston 1964).

The intervention of World War II in 1941 substantially brought archaeological field work to

a close during the first half of the decade. However, in the fall of 1944, Black was appointed lecturer at Indiana University, and courses in New World prehistory were offered on a regular basis at an Indiana institution for the first time. And during the summer of 1947, the Angel Mounds archaeological field school was initiated as a co-operative effort of the Indiana Historical Society and the University. Its purpose was to provide the interested student with an opportunity to participate in field research and learn the skills associated with this part of the archaeological endeavor. It was one of the top two or three such field programs in the United States, and more than 150 students participated during its sixteen-year history, a number of whom continued in archaeology or related areas.

In 1960, Black resigned his teaching position at Indiana University in order to devote full time to the preparation of a report documenting the years of work at Angel Mounds. *Angel Mounds: An Archaeological, Historical, and Ethnological Study* was published posthumously in 1967 by the Indiana Historical Society, Black having died in 1964.

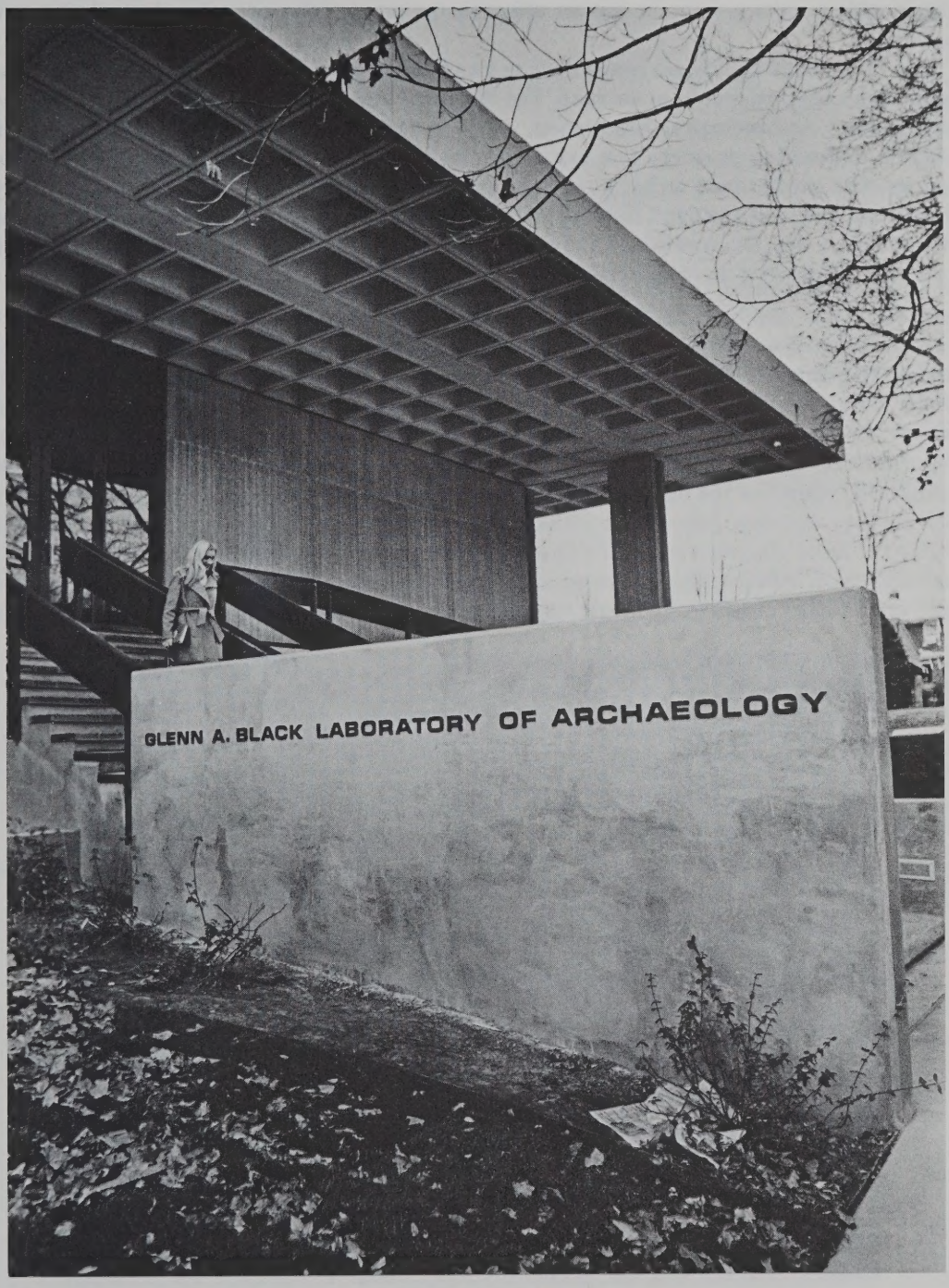
Because the society was the only institution in the state engaged in archaeological research and it had been such for more than thirty years, the resources accumulated were irreplaceable. Included were invaluable site records and collections as well as a research library and equipment. With Black's death, a major decision had to be made concerning the future of the program, and it was finally determined that the resources would be most useful if they were placed in a university setting. Therefore, they were transferred to Indiana University, and a grant from Lilly Endowment, Inc., made possible the construction of the Glenn A. Black Laboratory of Archaeology at that institution. The structure and its resources complement the teaching and research interests of the university and include a museum which is open to the public.

The decade of the sixties was marked by an increase in the level of support afforded Indiana archaeology in educational institutions. Indiana University, though having had part-time staff for many years, employed a full-time archaeology faculty member in 1960. Ball State University and Indiana State universities followed in 1964. The University of Notre Dame was added to the list in 1970. Most recently IUPU-Fort Wayne has hired an archaeologist with local interests. All in all, the level of ongoing work in the state has been tremendously increased in recent years.

The sixties also witnessed the beginning of a legally mandated historic preservation program in the United States, and the consequences have significantly changed the practice of archaeology. Basically, a complex of federal laws, an executive order, agency procedures, and state legislation in some instances, potentially made nearly every federal action, whether directly through funding or by reason of a permit granting authority, susceptible to review in order to determine adverse impacts on historic resources. These developments almost at once took archaeologists out of the classrooms and museums and made them consultants and professional participants in a host of construction-related activities. Rather than initiating field research, archaeologists for about the past decade have been engaged in structuring field activities that respond to industrial developments or public works projects in an effort to conserve and preserve historic sites and the information they contain.

As of this writing (1982), in addition to the universities noted above, archaeologists working in Indiana are employed by at least one environmental consulting firm, the Indiana Highway Commission, and the divisions of Reclamation and Historic Preservation and Archaeology, both in the Department of Natural Resources, all as a consequence of the preservation effort.

In 1977, the Council for the Conservation of Indiana Archaeology was formed. Composed of the professional archaeologists in the state, it is intended to co-ordinate archaeological activities



Glenn A. Black Laboratory of Archaeology, Indiana University, Bloomington

and provide a unitary voice in matters affecting the preservation of archaeological sites and collections.

One of the more significant recent developments has been the formal organization of avocational archaeological groups in the state. The Wabash Valley Archaeological Society, Indianapolis Amateur Archaeological Association, and Northwest Indiana Archaeological Society, in addition to fostering programs that expand the knowledge and expertise of the members, cooperate with professional archaeologists in excavation projects, annual field and laboratory workshops, and joint meetings. Substantial contributions to knowledge have been made by these organizations, and the network of informants represented by the membership has played an extremely important role in conserving a portion of Indiana's past.

Indiana Prehistory: A Summary

There are literally thousands of prehistoric sites scattered throughout Indiana that document the existence of human populations thousands of years before European settlement. It is a rare river terrace that provides no such evidence, and every county has its lore concerning Indian villages, mounds, and other prehistoric features. The most common evidence is the seemingly ubiquitous and often misnamed "arrow head" manufactured from locally available cherts and flint. These may be found associated with other materials, such as animal bone, fire-cracked rock, mussel shell, and sometimes broken pieces of pottery, all of which serve to identify the camps and villages of early Indian groups. Burial mounds were widely, though not uniformly, distributed in the state. There are a few hilltop "forts," some geometric earthworks, numerous rock-shelters containing evidence of long periods of use, and workshops where raw materials, more often chert or flint, were processed. Now and then human skeletons are accidentally exposed from unmarked graves to reveal the physical remains of those responsible for all the evidence. All of these offer

Flint Quarry and Workshop, Harrison County

a rich source of information regarding the prehistoric Indian in Indiana, provided care is exercised in the recovery.

Indiana is a small and, from the perspective of prehistory, artificially defined unit in eastern United States. Certainly, the prehistoric Indians recognized no such political entity. Archaeologists and prehistorians working with the archaeological evidence from this larger geographic area have devised a number of generally understood frameworks for organizing their data. The one used here emphasizes what appear to be the major cultural continuities in our area. These continuities are recognized by the persistence of certain life-styles that are usually reflected in recurring or stylistically related manufactured objects. This is what we mean by *tradition*. There are four major prehistoric traditions in the eastern United States: *Paleo-Indian, Archaic, Woodland,* and *Mississippian*.

The *Paleo-Indian Tradition* (to about 8,000 B.C.) refers to the earliest well-documented New World populations. These groups apparently lived in North America during the waning days of the "ice age" (Pleistocene) and at least in some areas hunted and killed the large extinct mammals associated with the period.

The *Archaic Tradition* (8,000 B.C. to 1,000 B.C.) includes early groups which were small in size and seasonably mobile and who depended in large measure upon hunting and gathering for their food. The time period is one during which there were substantial changes in life-style. Related to the earlier *Paleo-Indian Tradition* in the beginning, there is through time an increasingly more efficient utilization of the available natural resources, a more specialized tool kit, the beginnings of trade in raw materials, greater residential stability, and a seeming population increase. Also, the burial ceremonialism that is reflected in the mounds and craftsmanship of somewhat later periods has its beginnings in the Archaic. These changes and developments occur during an interval when the natural environment is also undergoing modification following the Pleistocene, the end result being natural conditions that approximate these encountered when the first Europeans entered the area.

The *Woodland Tradition* (1,000 B.C. to A.D. 900) is customarily defined by the presence of pottery, the surface of which is impressed with cords and/or fabric, and the development of a specialized burial ritualism. Most of the burial mounds in Indiana are associated with this tradition. Plant cultivation, while there is much debate as to how important it was for the Woodland peoples, was practiced.

The *Mississippian Tradition* (A.D. 900 to A.D. 1600) ultimately includes settled town life in some areas of eastern United States and greater residential stability in others. This adaptation was based upon an intensive utilization of cultivated plant products, i.e., maize, beans, and squash. The presence in some areas of flat-surfaced mounds upon which were erected important structures and a distinctive pottery complex help define this tradition.

These traditions are customarily subdivided into a number of "periods" which are defined by distinctive artifact styles and cultural practices. Additional differentiation is obtained by recognizing highly localized cultural expressions which are variously referred to as *phases, foci,* or *complexes*. Though such a system might at first seem somewhat obscure, a comparable model is sometimes used when discussing our own history. For example, an historian might identify a Euro-American cultural tradition when discussing the roots and development of our nation. The same person might divide this tradition into a number of periods, e.g., Classical Period, Middle Ages, Renaissance, The Age of Discovery, Atomic Age, etc. Each of these is defined by characteristics that point up some significant cultural features. However, not all areas and peoples

were equally affected by the same conditions prevalent during any one of these periods and one might then look at the more localized setting, e.g., Italy during the Renaissance as distinct from England. Historians usually have written records to assist them in organizing data, but the prehistoric archaeologists are restricted to the materials they excavate and their comparative knowledge of culture. However, the basic idea is the same in both instances.

The Paleo-Indian Tradition

A distinctive projectile point form made from chert and chalcedony is widely distributed in North America. The distinguishing characteristics include its lanceolate form, concave base, and basal edges which have been blunted and ground smooth to insure that the hafting material used to bind the point to a spear shaft would not be severed by the sharp edges of the stone. Additionally, a narrow vertical flake was removed from both blade faces to produce grooves or "flutes." This last is the basis for referring to such artifacts as fluted points. These occur with some frequency and variation in various parts of North America.

Fluted Point

In a few areas of North America, particularly the High Plains region and portions of the Southwest, fluted points have been recovered in direct association with the remains of extinct forms of mastodon, bison, and other animals that lived in the late Pleistocene environment. These associations combined with cutting marks on the surviving bones clearly indicate that the fluted points were employed to kill and butcher the large beasts. Carbon-14 dates these associations to about 10,000 B.C.

In the eastern United States, similar fluted points have been found in considerable numbers, but only rarely do they occur in good datable contexts and, at least to the present, almost never in association with animal remains, either extinct or modern. They are customarily found on eroded terraces or other old landforms where few if any other artifacts are present; hence the information about this distinctive artifact form from eastern sites is less complete than in the more westerly areas.

There are a few exceptions to this somewhat negative picture. Recently, in eastern Missouri,

a site has been excavated in which fluted points were found in seeming direct association with mastodon bones (Graham 1981). Also, a few fluted point-producing sites have been dated by carbon-14. The Debert Site in Nova Scotia is about 10,500 years old and seems to have been occupied when the Pleistocene ice mass was only fifty miles or so north of the site (MacDonald 1968). While there is no clear evidence for the type of game that was hunted, it was suggested that caribou could have been utilized. Another dated site with fluted points, Bull Brook in Massachusetts, is over 9,000 years old (Byers 1954, 1955). Similarly, the Thunderbird Site in Virginia has a dated fluted point horizon with an age of about 11,000 years ago (Gardner 1974). Numerous other work stations producing fluted points have been identified in the east, though no datable materials have been recovered.

The fact that good datable contexts have not been common in the eastern United States initially led to other approaches in the effort to determine the time of use of these artifacts. Inferring from the western associations, it was suggested that fluted points were employed during a time when the Pleistocene ice sheets were retreating northward. As a consequence, some areas would have been inaccessible to human use, either because of the presence of the ice mass itself or the marshy conditions that would have been a result of the melting. The absence of fluted points in a particular area might then derive from this glaciation-induced condition, and their period of use would be suggested. Mason (1958) and Prufer and Baby (1963), based upon studies of fluted point distributions in Michigan and Ohio, respectively, believed that such associations could be observed.

In Indiana fluted and derived forms representing the *Paleo-Indian Tradition* have been found with some frequency in most parts of the state, though never in good context. Customarily a single point will occur as an isolated find or in association with seemingly later materials. Because the discoveries are usually accidental and made by collectors, information concerning such points is sparse and often difficult to acquire. Nevertheless, based upon their typological similarity to dated forms noted above, those in Indiana are thought to be equally old.

Tomak (1980) has described a site in Perry County that has produced a number of artifacts attributable to the *Paleo-Indian Tradition,* including a fluted point. Subsequent excavation suggested that materials were confined to the disturbed plow zone, however.

Dorwin (1966) studied 195 fluted points from Indiana, the information for which was largely derived from a questionnaire distributed to artifact collectors. More than a third of those reported were from counties in the Ohio Valley proper, and most of the remainder had come from other major stream valleys. Though this distribution undoubtedly reflected a collecting bias with the larger and more productive sites producing the most surface material being located in those areas, the study documented the wide distribution of the fluted point. He also noted that there seemed to be an absence of points in the Allen, Huntington, Wells, and Adams counties area and concluded that this may have been associated with the presence of an ice mass in that area about 14,000 years ago. However, fluted points have more recently been reported from that area.

Fluted points constitute the earliest well-documented evidence for the presence of man in the New World. However, there are some logical arguments suggesting that earlier evidence remains to be recognized. One of the more persuasive of these is that the manufacture of fluted points involved some considerable technical sophistication and, since there are no recognizable antecedents in northeast Asia—the probable place of origin of the first migrants—the earlier developmental steps in the manufacture of the distinctive point must have occurred in the New World. Some support for this assumption is provided by a few carbon-14 dates that are considerably older

than those generally accepted. However, most of those proposed derive from questionable contexts or, upon further investigation, have been found actually to be in error. Currently, the Meadowcroft Rockshelter in southwestern Pennsylvania with dates in excess of 17,000 years ago for its deepest cultural levels is receiving much attention (Adovasio 1979, 1980). However, because the environmental conditions reflected in the archaeological record at the site are entirely modern and not Pleistocene influenced, as one would expect at this early time, it has been suggested that nearby coal deposits may have contaminated the charcoal used for dating. If true, a much too early date would have resulted.

Periodically it has been proposed that migrants from Europe, North Africa, Japan, outer space, a sunken continent, or a "lost tribe" played a positive role in New World cultural development. Such proposals have little to recommend them to the attention of the serious reader.

In sum, man was present in the New World by at least 10,000 B.C. with technological resources to survive and spread over both continents. There are some data from Indiana reflecting upon this early cultural level.

The Archaic Tradition

It is difficult to characterize briefly all of the Indian cultures subsumed by the *Archaic Tradition,* since the dominant long-term trend is change, both as regards the natural conditions confronted by man and the nature of the cultural response. Groups tend to be relatively small and mobile. Subsistence derives from a blending of food collecting, hunting, and sometimes fishing. Technology tends to be simple. However, such a static description tends to ignore important changes that occurred slowly in the interval from about 8,000 B.C. until 1,000 B.C., the period of primary concern. Among these changes are an increasing population, a growing technological sophistication, a broadening subsistence base, a trend towards greater residential stability, the establishment of trade networks, and the burial ceremonialism that is emphasized at a later date is foreshadowed.

The time of the *Archaic Tradition* is one during which the harsh environmental conditions and the limited resources of the "ice age" were ameliorated and were finally superseded by a climate, fauna, and flora approximating that first encountered by Europeans upon entrance into the New World. Average temperatures increased; the tundra-like aspect of portions of Indiana moved northward and was initially replaced by coniferous forests and, finally, by the deciduous hardwoods. Rivers which had served as major sluiceways for glacial meltwater diminished in size to expose broad and flat aggraded valleys, and the large Pleistocene mammals that had foraged in the area became extinct.

Man, in order to survive in an altered and changing natural environment, found it necessary to modify a way of life and discover new opportunities. The archaeological record indicates that change was initially slow. Originating in the *Paleo-Indian Tradition,* the Early Archaic continues the dominant hunting pattern. However, projectile point styles occur in greater variety. Some of these retain the lanceolate form and basal grinding of the earlier form, but flutes are consistently absent. Other points from this period are relatively large and stemmed. Many are extremely well made and indicate a substantial skill in flint knapping. While the total cultural inventory is sparse for this period, Early Archaic projectiles have been recovered from dated and deeply stratified rock-shelters and alluvial deposits in many areas in eastern North America, including Indiana, and a chronological sequence for these artifacts is firmly established.

Also, Tomak (1979) has reported a possible Early Archaic cemetery in Daviess County

MacCorkle Stemmed

Plano Blade

St. Charles

Dalton

LeCroy

Kirk Corner Notched

Late Paleo Indian—Early Archaic Blades

that contained human cremations, red ocher, drilled animal teeth, and bone and shell artifacts.

Similarly, much of the knowledge of the Middle Archaic is represented by a sequence of comparable artifact forms. However, excavations in deeply stratified sites such as Koster in Illinois reveal a gradually evolving cultural system with subsistence based upon the usage of a wide range of naturally occurring plants and animals, housing architecture that suggests greater residential stability, and cemetery areas (Streuver and Holton 1979). Also, the ability to manufacture stone tools by grinding and smoothing, in addition to chipping, is developed at this time, substantially enlarging the varieties of specialized implements suited to particular tasks.

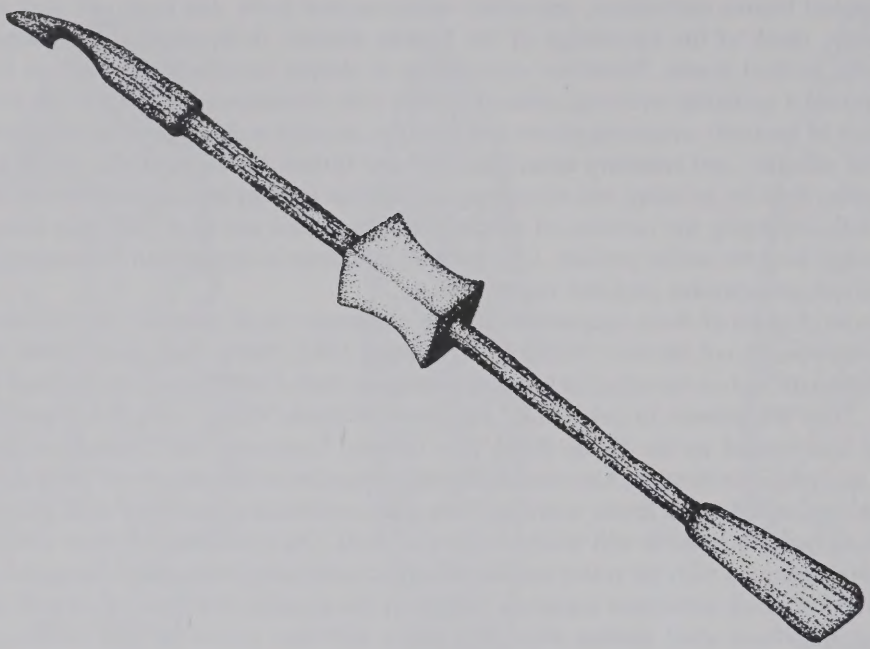
In contrast with the earlier periods, Late Archaic in Indiana is represented by hundreds of sites which reflect considerable regional variability.

The most obvious of these adaptations are the numerous "shell mounds" encountered in the southwestern portion of the state (Miller 1941; Winters 1963, 1969). They occur within the Ohio River floodplain and on the adjacent terraces downriver from Clark County into at least Warrick County. They are present in portions of the lower Wabash Valley, i.e., Posey and Sullivan counties, and extend up the White River into Dubois, Lawrence, and Orange counties. The mussel, an oyster-like bivalve, was at one time very abundant in the streams of the region before pollution, and raised water levels resulting from dam construction destroyed their habitat. They provided an easily accessible and reliable source of food. Once the meat had been removed, the shells were discarded with the result that the slowly accumulating heaps provided a well-drained elevation upon which settlement occurred. Judged by the quantity and kinds of cultural materials encountered at these shell midden sites, it is likely that they served as base camps and were occupied for considerable periods of time during the year.

While none of the recorded shell mounds in Indiana compare in size and depth to some reported in Kentucky, Tennessee, and Alabama, they are impressive. A few represent an accumulation of ten feet or more and may be several acres in horizontal extent. However, data concerning size are difficult to obtain since many of the sites, particularly those in the Ohio Valley proper, are often buried by several feet of more recent alluvium. Only a caving riverbank, cultivation, or a construction project provides evidence for their existence. Undoubtedly there are many more present than have been recorded. Along the smaller tributaries of the Ohio the shell middens tend to be located on terraces or high bordering bluffs overlooking the floodplain.

Though the mussel provided an abundant and reliable food source, and they must have been consumed in tremendous, albeit monotonous, quantities, other food sources were heavily exploited as well. Large numbers of deer were butchered, as were elk and bear, and the remains of smaller mammals are present in the middens. Also, turtle, fish, and water fowl were taken. Where conditions of preservation permit, charred remains of plant products, particularly hickory, occur in great abundance. In brief, the evidence suggests that a broadly based food supply is represented. Also, though probably not a major contributor to the food supply, cultivated squash is present by at least 2,000 B.C.

The major hunting weapon was the spear used in combination with the spear thrower. The latter in its simplest form was a short wooden shaft measuring about 18 inches in length, one end of which was held in the hand and the other with a hook attached provided a temporary rest for the basal end of the spear. This simple mechanical device extended the length of the arm during the casting motion resulting in the transfer of considerably more force to the spear. At least some of the spear throwers encountered in the shell mounds were of a composite nature and consisted of a round wooden shaft to which were attached bone handles and hooks. Perforated shells and



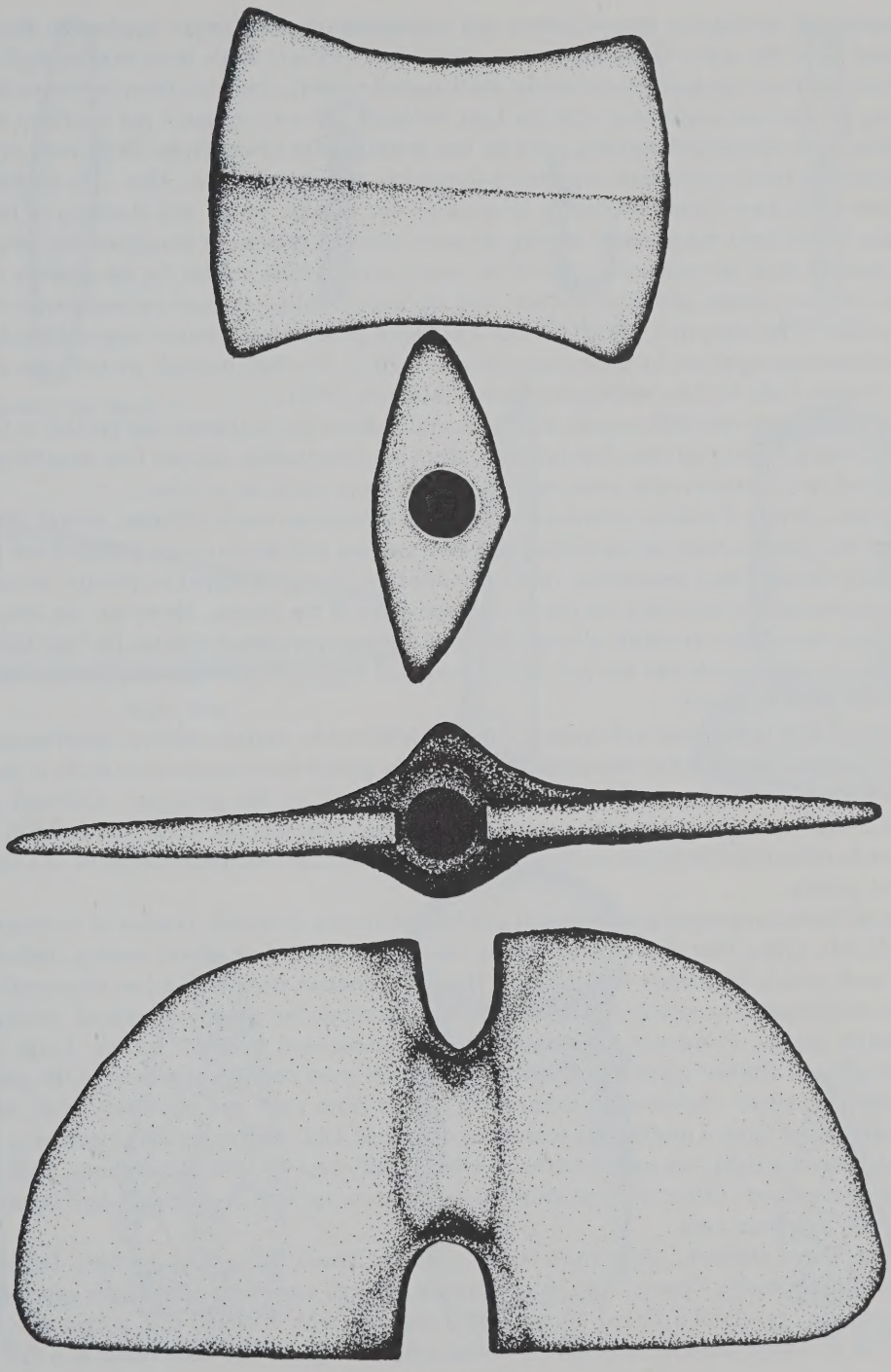
Archaic Spear Thrower

stones were sometimes placed on the shaft. Some of the latter, the so-called "bannerstone," were extremely well made and manufactured from rose quartz, which was finished to a high polish.

Most of the material remains found in the shell mounds are utilitarian in nature. There are a variety of chipped flint projectile points, knives, drills, and end and side scrapers. Ground stone artifacts include grooved axes, bell-shaped pestles, and a number of well-made artifacts made from slate. A few tubular pipes suggest the occurrence of smoking. The bone and antler artifact assemblage is particularly rich, though some of this abundance undoubtedly results from the excellent preservation conditions encountered in the shell mounds. Included are projectile points, awls which are sometimes engraved with geometric designs, polished bone pins and needles, and fishhooks. Fragments of fire-cracked rock often occur in quantity, and it is concluded, since pottery is lacking, that liquids were heated by placing them in skins or coated baskets and dropping in heated stones (stone boiling). Occasional scattered post molds in the shell middens suggest the use of simple windbreaks or other shelter types. Prepared clay floors and fire hearths may occur in such areas.

Human burials have been found in substantial numbers in such sites. For example, Indian Knoll, a large shell midden located on the Green River in Kentucky, has recorded well over a thousand burials during the several seasons of excavation there. Commonly, shallow circular pits were dug into the shell midden deposit, and the dead were placed in these in a tightly flexed position. Interestingly, domesticated dogs were sometimes placed with the human remains or were given a separate burial.

While the overall cultural picture which emerges emphasizes utilitarian pursuits, there are



Archaic Bannerstones

indications of developing specialization and widespread trade. Copper appears to have been obtained from the upper Great Lakes area, and a few artifacts made from marine shell occur.

While emphasis has been placed on the shell mound contexts, because these represent the most obvious kind of site associated with the Late Archaic, life was certainly not confined to these localities. The subsistence remains indicate that a wide range of native products were exploited and obtaining these would have required a somewhat mobile existence. Also, it is doubtful that shellfish could have been obtained at all seasons due to high water, and flooding of the river bottoms would have necessitated moving to more elevated regions. Throughout the area of the shell mounds there are numerous sites of the same period which, except for the absence of shell debris, produce nearly identical artifacts and are undoubtedly seasonal encampments of these same people. The many rock-shelters in the Crawford Uplands often contain deep midden deposits that represent occupations by these same groups. In brief, the shell mounds are only one element in a complex Late Archaic settlement system (Munson 1980).

Northward from the shell mound area in central Indiana cultural materials similar to those in the south are encountered also. For example, there is a comparable chipped flint assemblage, the compound spear thrower was used, and the ground stone tools are similar.

The later *Archaic Tradition* complexes in northern Indiana are much different, though very little work in the area has been accomplished and they are less well understood. Much of our present knowledge derives from cemeteries, most of which have been discovered accidently; hence, little can be determined concerning the day-to-day activities of the groups. However, the absence of any single consistently available and storable food resource combined with the fact that habitation sites are generally small and not intensively occupied suggests that migratory hunters and food collectors were involved.

Glacial Kame is the most widespread of these northern late Archaic cultural manifestations. It derives its name from the fact that cemeteries from the period were customarily made in sand and gravel ridges formed by glacial outwash called "Kames" by the geologist. Although not all human burials encountered in such contexts necessarily represent the same time interval, many of them do reflect similar burial methods and a recurrent artifact complex indicative of a common cultural pattern.

Glacial Kame cemeteries are unmarked and their discovery is usually a matter of accident (Lilly 1942:31-33). Often first encountered during the course of sand or gravel mining, information about such sites is frequently secondhand. They may contain from only a few to several dozen human interments. The tightly flexed burials, usually single but sometimes paired, were placed in circular graves. Powdered red ocher was often associated with the bodies. Large drilled sandal-sole and circular gorgets cut from marine shells were sometimes placed in the graves as were the distinctive "birdstone." Commonly carved from slate and extremely well made, it derives its name from a profile that resembles a stylized bird. One suggested function is that of a spear thrower weight, but such a use has not been confirmed by other associations, such as that for the bannerstone. Other artifacts from burial contexts include copper and shell beads, long bone pins, and bone awls.

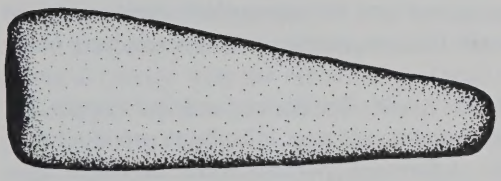
Glacial Kame artifacts, some from burial sites, are found throughout northern Indiana and southward into Shelby County. The latter example, though somewhat outside the expected area of occurrence, involved a flexed human burial together with a sandal-sole gorget and copper beads, all of which were literally buried in red ocher; the grave had been made in a low sandy ridge.

Cannel Coal Bead

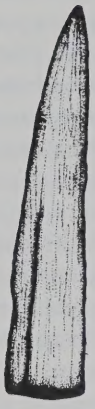
Bone Pen

Fishhook

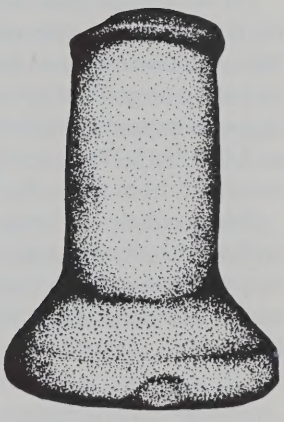
Bone Pen



Stone Pipe



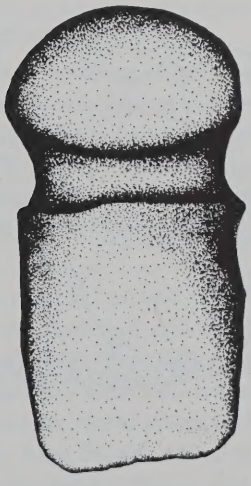
Antler Projectile Point



Pestle

Bone Pen

Matanza Point



Grooved Ax

Riverton Point

Late Archaic Artifacts

A related mortuary complex in the western portion of the state bears the somewhat ambiguous title Red Ocher. Small, low, artificial mounds were constructed, and quantities of ocher were sometimes placed over the burials covered by the mounds. The distinctive artifact is a narrow bi-pointed flint blade with shallow side notches at one end. These are commonly called "turkey tails" and were typically manufactured from an excellent quality blue-grey "flint" extensively mined in south-central Indiana, particularly Harrison County. These blades have been found singly as well as in buried caches of several dozen. There is also some suggestion that an early form of heavy pottery, *Marion Thick,* may be coeval with Red Ocher.

A salvage excavation of a Red Ocher mound in Terre Haute, though hindered by the premature bulldozing of a school construction site, succeeded in identifying a shallow clay basin within which were the charred remains of a human cremation associated with flint blades, including a "turkey tail," an expanded-end bar gorget made of stone, and scattered deposits of red ocher.

On occasion copper artifacts have been reported in northern Indiana that appear to reflect a third late Archaic cultural expression, the Old Copper Culture. Old Copper is indigenous to Wisconsin where mass burials may have associated a number of distinctive copper artifacts, including tanged and socketed projectile points, knives, axes, and awls. Located in areas where copper was readily available, such material was hammered into the appropriate shapes as early as 3,000 B.C. While no Old Copper sites are known in Indiana, reminiscent artifacts have been recovered from the surface.

Because there are some general similarities in Glacial Kame, Red Ocher, and Old Copper, as well as with other archaeological cultural expressions farther to the east, it has been proposed that they be grouped into a "northern" or "boreal" archaic. A further hypothesis is that the beginnings of the mortuary ceremonialism that climaxes in the subsequent *Woodland Tradition* occur in this area.

"Turkey Tail" Blade

By way of summary, then, the *Archaic Tradition* is characterized by change, slow in its earliest stages but with an increasing tempo that ultimately produces a more efficient adaptation to a variety of local environmental conditions. Though it can be argued that the technology is relatively simple, the widespread if not abundant occurrence of copper and shell from the warm salt waters to the south is indicative of an incipient trade network. Human groups have traversed a considerable distance from the hunting adaptation that seems to characterize the earliest period.

The Woodland Tradition

The *Woodland Tradition* is basically defined by the presence of pottery containers with surfaces distinguished by cord impressions or other decorations applied using a flat paddle-like tool. Also, the numerous burial mounds and many other earthwork features found in eastern North America are a part of this interesting tradition. Some observers associate substantial plant cultivation with Woodland, but the importance of this subsistence strategy has not been confirmed.

The introduction of the widespread use of pottery constitutes a technical achievement of no small importance, not only for the cooking and storing vessels produced but also as regards the intellectual endeavor represented. Ceramics is the only native product which entails an actual transformation of raw materials into something totally different. Selected clays, tempering, and water are proportionally combined and, after sun drying, sufficient heat is applied to induce a physical change with the result being a hard insoluble substance.

Ceramics are also important for the prehistoric archaeologist. Each step of the pottery-making process is susceptible to considerable variation: choice of clays and the tempering medium, methods used to form the container, shape of the vessel, types of surface decoration, presence or absence of handles and other appendages, and the firing process. All of the foregoing separately and in combination can produce a seeming unending variability. However, what was produced was controlled in large measure by style preferences which differed at particular times and places. Because broken pieces of pottery are frequently the most common artifact recovered at an archaeological site, when this is combined with its systematic variability, archaeologists almost everywhere in the world use pottery to anchor area chronologies and at least initially, identify cultural groupings.

The origin of pottery in northeastern North America is presently unclear. The oldest pottery in North America was made in the Georgia-Florida area at about 2,000 B.C. It is thick, heavy, and tempered with vegetable fiber. The elongated oval vessel shapes are reminiscent of yet earlier containers manufactured from steatite or soapstone. Fiber-tempered pottery is also found in northwestern South America at an earlier date, and it has been suggested that the occurrences are related, but the substantial distance between the two poses difficult problems for one inclined to derive one from the other.

As regards the beginning of Woodland pottery, at one time there seemed to be an insurmountable temporal and technical difference between it and the fiber-tempered materials in the southeast. This made unlikely the derivation of one from the other. However, more recent work has eliminated much of the temporal gap and has identified transitional forms.

Because cord-impressed pottery is also an Old World characteristic, it has been proposed that this idea was introduced from there into the New World, either from northeast Asia or Europe. Logical as this might appear at first view, the simple fact is that thousands of miles intervene between the two distributional areas with no direct evidence to connect them.

A third alternative might be that this consequential innovation was arrived at independently in

its area of occurrence. This, of course, does not resolve the problem; but it suggests that much critical evidence is not yet in and the wisest choice may be to avoid the question of "origin" for the present.

It has been a common practice to state that the beginning of the *Woodland Tradition* represents little more than Archaic with the addition of pottery. That is, while a technical contribution has been made, the life-style itself is essentially unmodified. While this may be true for some regions, certainly southern Indiana offers a contrary view. Conspicuously, the utilization of the river mussel is markedly diminished judging by the absence of shell middens. This suggests that some alteration in subsistence practices and settlement have occurred. The decline in the utilization of this resource is unexplained. Perhaps the mussel was no longer available in quantity, or changes in dietary preference may have been a factor. As regards the latter, there is some evidence that plant cultivation may have begun to play a more important role in diet.

The earliest pottery recognized in Indiana is a type referred to as *Marion Thick*. It or related material occurs in southern Indiana and northward in the Wabash drainage into the lake area. As the name suggests, it is a heavy coarse ware the outer surface of which, also often the inner, is impressed with cord impressions having a resemblance to woven fabric or basketry. The compaction of the clay using a roughened device, such as a paddle wrapped with cordage, anneals the damp paste and eliminates captured air pockets the presence of which would be disastrous during the firing process. The vessel shape resembled that of our common flower pots.

The sites where *Marion Thick* occurs are generally small, though the presence of numerous pits and thick midden deposits suggest the areas were occupied intensively for limited periods, perhaps seasonally.

It is during the Early Woodland period that burial ceremonialism represented by complex mound structures become abundantly evident. It was the presence of such features that excited the interest of early settlers in the region and contributed to some unfortunate theories concerning their significance. It is unfortunate in the sense that the burials and artifacts found in the mounds were thought to represent, when compared with the cultures of the historic Indian encountered by European settlers in the Ohio Valley, an infinitely superior level of culture. The presence of earthwork complexes, some containing large geometric structures, indications of widespread trade in exotic raw materials, and artifacts exhibiting an aesthetic sophistication contributed to the creation of a "mound-builder" myth. The people responsible for these works were said to be intellectually superior, possess an advanced technology, have a political system capable of controlling vast areas, and were racially different from the American Indian. It was the last group which was responsible for the downfall of this widespread "civilization." A variety of proposals have been suggested to explain the superiority of the "mound builder race," including its derivation from the Lost Tribes of Israel, Egyptians, Welsh, Atlantis, etc. Systematic archaeological work has long since laid to rest these fanciful tales and demonstrated that the mounds and associated practices represent a part of the American Indian heritage in eastern North America, yet many of these earlier interpretations continue to confuse us in the popular media.

As noted above, burial ceremonialism was not a cultural complex that appeared suddenly on the scene, but its antecedents were present in the burial practices observed during the Late Archaic. The practices apparent there underwent change and gradually increased in complexity during a 1,000-year period varying in time and place as they were interpreted in the many differing cultural complexes in eastern North America. Though mound burial persisted in some areas to late prehistoric times, it had largely run its course by A.D. 400 or before.

Woodland Burial Mound, Dearborn County

The earliest developed burial mound complex, named Adena after the Ohio estate on which the type site was located, is widely distributed in the Ohio Valley from West Virginia into southeastern Indiana (Dragoo 1963). The burial mounds vary greatly in size from those that were relatively small and almost imperceptible to two that are nearly seventy feet in height. The larger mounds are frequently complex structures involving several building stages, each of which may have incorporated a major burial interlude. These are generally marked by the presence of well-constructed tombs made from logs, some of which formed crypts. The majority of these tombs contain a single extended burial, but multiple burials are sometimes present and cremations also occur. There is some suggestion that the tombs may have been left open for ritual and visitation before being covered by the mound. Several observations lead to the conclusion that the individuals interred in mounds represented an upper status group. Among these are the fact that the number of burials is generally small when compared with the mound mass, the elaborateness of the tombs themselves, and the presence of unusual artifacts in the graves.

Few Adena villages have been identified or excavated, and knowledge of daily life is limited. The larger mounds were sometimes constructed over portions of the habitation sites, and they were preserved as a consequence. Adena village debris is also contained in the mound fill on occasion indicating that a portion of the habitation area was scraped up during construction. Excavation in the village areas have succeeded in identifying large residential structures. Typically they are circular in ground plan, had outward sloping walls, and the structure was covered with bark. Some of these buildings seemingly served as charnel houses, which were

An Adena Log Tomb with Burial, Dearborn County

subsequently burned, and the mounds were then constructed over the remains. Work in central Ohio suggests that the Adena communities were small and dispersed over the countryside. The inhabitants of several of the communities probably maintained a special social relationship and co-operated in the construction of the mounds and shared in the attendant ritualism.

The subsistence dependency of the Adena people was upon naturally occurring plants and animals, but there is also good evidence that agriculture, particularly in the form of cultivated squash, was beginning to play a more prominent role.

Reference to two excavated Adena mounds in Indiana will provide some notion of the content and variability of such structures. The Nowlin Mound was located in Dearborn County on an upland formation near the Whitewater River and adjacent to a small creek that flowed into the Ohio River (Black 1936). Elliptical in ground plan and measuring 165 feet in length and 15 feet in height, it was one of the largest burial mounds in the state. Actually the mound had had a complex constructional history being composed of two adjacent early mounds, each of which had had multiple additions before the whole was covered by a single mantle of earth to bring it to its final form.

Seven log tombs were contained in the Nowlin Mound. Several of these were relatively simple with logs up to 8 feet in length placed on the ground surface to delimit rectangular areas. However, one of the log structures was nearly 20 feet in length and 15 feet in width; not only were the logs placed at the margins but others had been placed laterally to form a roofed structure. Earlier excavation by unknown individuals had succeeded in removing a part of the internal

evidence, but seven extended and four reburials were ultimately recovered from the tomb areas within the mound. The floors of the tombs were typically covered with a layer of bark, and the same material sometimes covered the bodies. Red ocher was another material commonly associated with the interments.

Within the Nowlin Mound artifacts associated with the burials tended to be infrequent. Included were disk-shaped shell beads, *Marginella* beads, and others made from the columella of marine mollusks, corner and side-notched projectile points, bone awls, bone handles, and a plain sandstone "tablet." A C-shaped copper bracelet, among other artifacts, was recovered from a disturbed portion of the mound.

In contrast with the very large Nowlin Mound, the C.L. Lewis Stone Mound, located on a bluff overlooking the Flat Rock River in Shelby County, was a low dome-shaped structure measuring about 55 by 50 feet and 4 feet high (Kellar 1960). Three major building stages were identified in this small mound. The first of the three was a low embankment which delimited a central area about 25 feet in diameter. Over this was placed a mantle of limestone slabs transported from the nearby cliff adjacent to the river. Subsequently, additional slabs were added to further enlarge the mound.

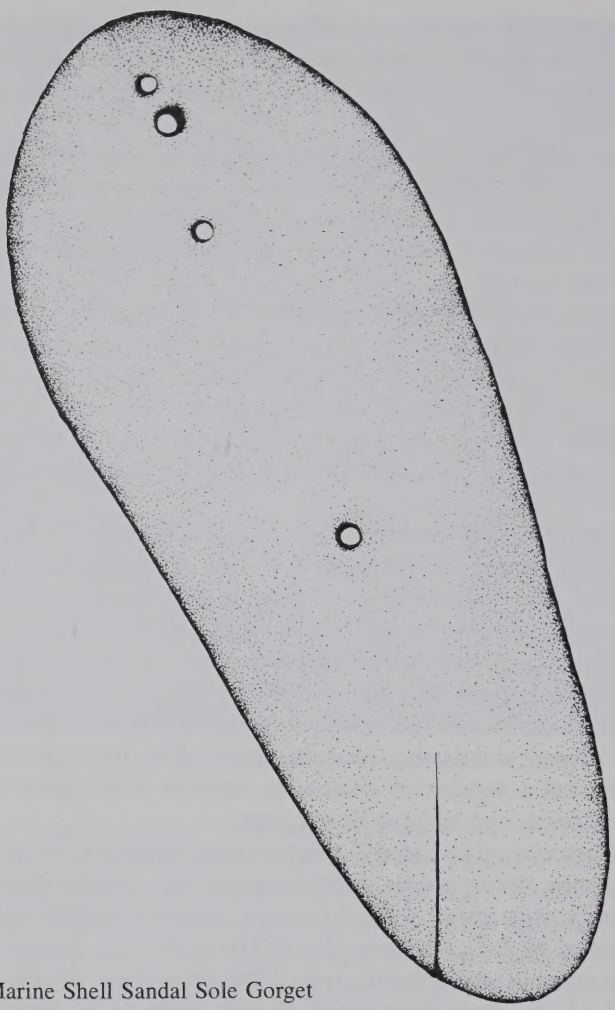
Portions of at least thirty-six human burials were associated with these several building episodes. A mass burial deposit containing the remains of at least fourteen individuals, both adults and children, had been placed within the central area; it had been covered with a thick layer of grass and twigs which had been burned. Directly above this central concentration and within a large oval depression defined by the limestone slabs there had been an intense crematory fire, and two partial human cremations were encountered in the area. A second mass burial area was found peripheral to the central area, and human skeletons and portions thereof were encountered at various locations beneath and among the slabs. Many of the individuals had been interred in an extended position, but a number of disposition methods were represented: flexed burials, disarticulated skeletal parts, and isolated human crania.

Artifacts in burial association included C-shaped copper bracelets, 26 copper beads, a copper earring, three bone combs, a bone handle, a flint hammerstone, a large corner-notched flint blade, an antler flaking tool, a stone chisel, beaver incisors, and an expanded center slate gorget.

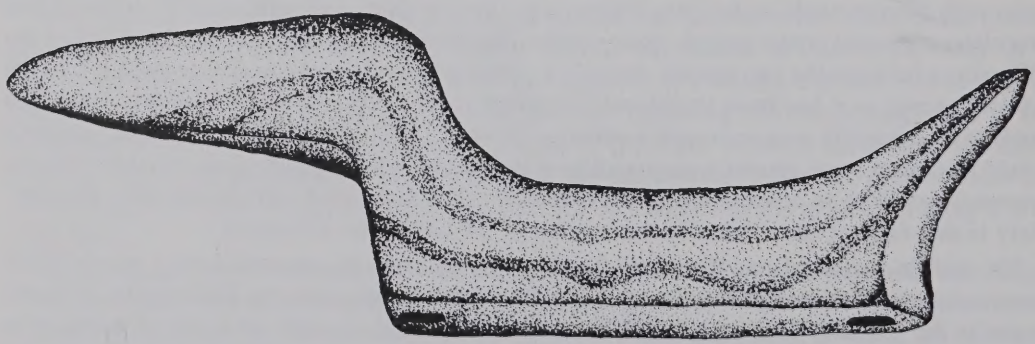
A radiocarbon date of 80 B.C. has been obtained from the C.L. Lewis Stone Mound.

Though these two mounds are obviously quite different in many details, an Adena affiliation has been proposed for both. These determinations were made on the basis of shared characteristics with other mounds in the Ohio Valley, e.g., the log tombs and artifacts such as the copper bracelets, expanded center gorget, bone combs, flint projectile points, etc. However, given the differences between the two tumuli, there is a growing suspicion among archaeologists that the Adena concept as it has been traditionally employed and extended over a relatively large area tends to oversimplify a more complex situation (Swartz 1971). A fruitful line of future research would be to gain some greater understanding of the variation in time and space. Another obvious approach would be to concentrate on the habitation sites associated with the mound's builders. Only in this fashion can a fuller understanding of the culture be developed.

The middle period of the *Woodland Tradition* is typically the interval during which burial ceremonialism attains its greatest complexity. In a sense it represents the culmination of trends begun in the Archaic. This is reflected in many ways. Burial mounds are widely distributed in eastern North America from southern Canada to the states bordering the Gulf of Mexico and the Appalachians to the Plains. Even more widespread trade patterns are apparent: obsidian from

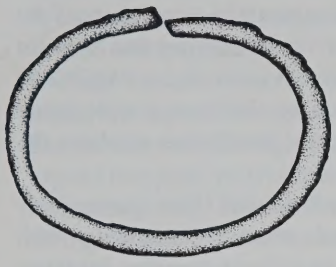


Marine Shell Sandal Sole Gorget

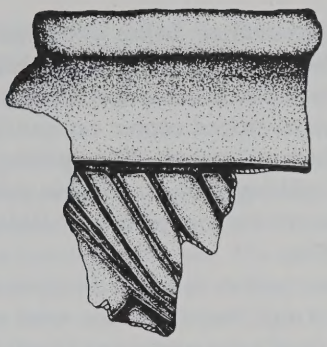


Birdstone

Late Archaic Artifacts (north)



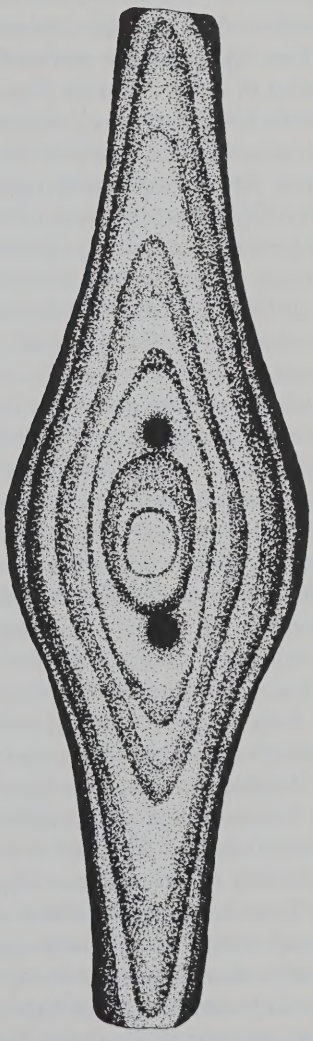
Copper Bracelet



Montgomery Incised

Adena Point

Adena Cache Blade



Expanded Center Gorget (slate)

Adena Artifacts

Wyoming, copper from the upper Great Lakes area, pipestone and flint from Ohio, Wyandotte chert from Indiana, mica from the southern Appalachians, and marine shells from the Gulf region. Also, a few distinctive artifacts occur sporadically in burial contexts in many parts of the east: copper panpipes, bicymbal-shaped copper ear spools, distinctive zoomorphic and monitor stone pipes, and terra cotta human figurines. Some pottery decorative styles such as complicated stamping, rocker stamping, incising, and a distinctive pattern of zoning also have a widespread distribution. All of these contribute to a picture of widespread social interaction at about the beginning of the Christian Era.

The area where this cultural pattern is most accentuated is in south-central Ohio, particularly in the Scioto River valley. Large burial mounds were constructed, often in association with geometric earthworks, and these were sometimes joined together in a single complex by thousands of feet of earthen embankments to form prehistoric centers of unusual size and complexity. These highly visible surface features attracted some of the earliest archaeological work undertaken in North America (Squier and Davis 1848). And the discovery of quantities of elaborate artifacts made from exotic raw materials associated with burials at these sites gave impetus to more work. The results of these excavations were widely publicized, and the inferred notion of great cultural superiority represented by these remains succeeded in coloring interpretations of North American prehistory to the present moment. Hopewell, the name given to this Ohio cultural expression, became the epitome of "mound-builder culture," and it was proposed that it was the unique cultural center to which all else could be related.

While there can be no doubt that the south-central Ohio region was of significant consequence during this Middle Woodland period, the emerging interpretation is suggestive of a significantly greater complexity than was originally proposed (Seeman 1979). For many years, archaeologists have recognized that Ohio Hopewell was related to the earlier Adena. This relationship was evident in aspects both of burial practices, including mounds, and some of the raw materials utilized and artifact forms; the differences could ultimately be attributed to cultural developments occurring through time. However, there were other features, such as decorative elements of the ceramic complex, which seemed to have no antecedents in the Ohio area. Therefore, these must have been derived from some other area. It has since been determined that some of the features characteristic of Middle Woodland were present at an earlier time in the Illinois River valley, and this has led to the conclusion that influences from that region contributed to the developing complexity. Giving added credence to this hypothesis is the presence of artifacts of almost certain Ohio manufacture in Illinois sites.

Indicative of the social relationships that must have existed over a wide area are other materials clearly derived from the southeast. For example, complicated stamped ceramics, a decorative style common in the Georgia-Florida area, occurs in the Ohio Valley.

Some archaeologists, particularly those working in the southern states, believe that the cultural antecedents will be found in the lower Mississippi Valley and these, in turn, will ultimately have a Middle American base. There is presently no direct evidence to support this position.

There is no single cultural expression present during the Middle Woodland period. There are many richly varied local groups, each of which reflects in some measure its own unique material traditions and environmental circumstances. Even the burial ceremonialism and its material accompaniments, which have received so much attention in the literature, exhibit much variation from one region to another. Some writers have proposed that a formal exchange system operated in eastern North America at this time and conceptualized it as the Hopewell Interaction Sphere.

Others have argued that it was precisely what would be anticipated if cultural diffusion were operating. *Hopewell Archaeology* (Brose and Greber 1979), a useful study of the Middle Woodland period in eastern U.S. prehistory, summarizes much of the data and considers these several interpretations.

There has also been much discussion of the subsistence base that supported Middle Woodland trade, craft specialization, earthwork construction, and the socially defined status differences that can be inferred. Though the hunting-collecting-fishing triad was clearly important, it has been argued that plant cultivation must have been essential, too. The evidence for the last has been slow in accumulating, but there is an increasing body of excavated data suggesting that agriculture was of importance in some areas and may have involved, in addition to squash, perhaps corn, and a number of locally available plants such as May grass, goosefoot, and the like.

In Indiana, Middle Woodland sites have a widespread distribution, though they seem to cluster into a number of localized expressions. These undoubtedly reflect time differences as well as geographic factors.

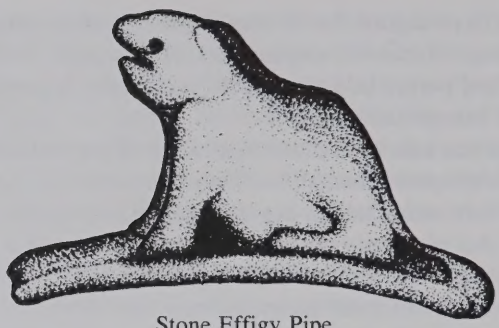
The earliest materials in the state attributable to Middle Woodland were recovered from a deeply stratified site near Yankeetown in Warrick County. These have been radiocarbon dated to about 300 B.C. The pottery recovered from this locale is tempered with clay, flint, and/or quartzite and has both plain and coarse cord impressed surfaces. This pottery is associated with living floors and hearths which contain many charred nuts and some animal bone. None of the ceramic decorative elements definitive for the period have been found nor is it known whether mound construction is associated with the occupation. It seems likely that the pottery is representative of a localized cultural expression immediately prior to the introduction of the later burial ceremonialism.

In southwestern Indiana in the Ohio and lower Wabash valleys many of the burial mounds are attributable to the Crab Orchard Tradition, a basically ceramic development defined by the presence of cord-wrapped dowel impressed pottery. Mounds of this tradition occur singly and in groups, often on high terraces and bluffs overlooking broad river valleys. While no mounds have been excavated in Indiana, the Wilson Mound (Md. Wh6) overlooking the Wabash River in White County, Illinois, is undoubtedly representative (Neumann and Fowler 1952). It contained a large central roofed log tomb in the center of which was a subfloor pit. A single extended burial had been placed in it. On the floor adjacent to the four sides of the pit opening were six additional extended interments. Associated with these were marine and turtle shell containers, antler flaking tools, a celt and beads made from copper, cut bear mandibles, a monitor pipe, and several distinctive curved base platform pipes carved in animal form.

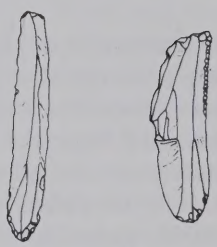
A number of other mounds were associated in this site as was a large village that contained a cemetery area. This is a further suggestion that mound burial was reserved for a special few.

The Havana Tradition, another local expression defined by a distinctive ceramic complex and centered in the Illinois River Valley, is marginally represented in the Wabash Valley. It occurs from about the mouth of the White River north into Tippecanoe County and up the White into Greene County and adjacent areas (Tomak 1970). Havana pottery, in addition to cord-marked and plain vessels with bosses and corded lips, has distinctive stamped, incised, and punctated designs that are readily distinguished in the region. Indiana State University has devoted much research time to documenting the Havana presence in Indiana and has salvaged a badly disturbed Havana mound in Vigo County which was radiocarbon dated at about 115 B.C. (Pace and Anslinger 1978).

Copper Earspool



Stone Effigy Pipe



Prismatic Flint Knives

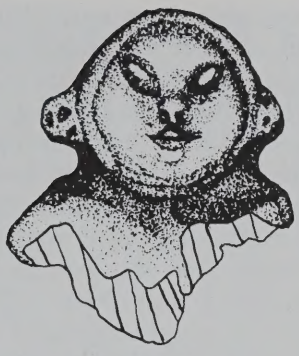
Hopewell Cache Blade

Lowe Flared Base Point

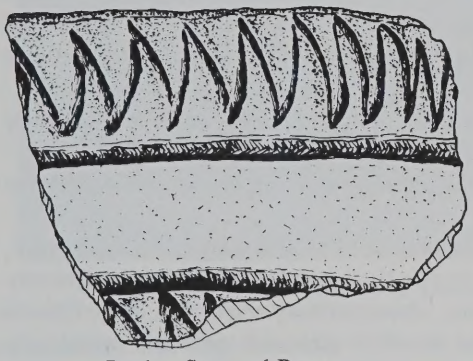
Snyders Point

Middle Woodland Artifacts

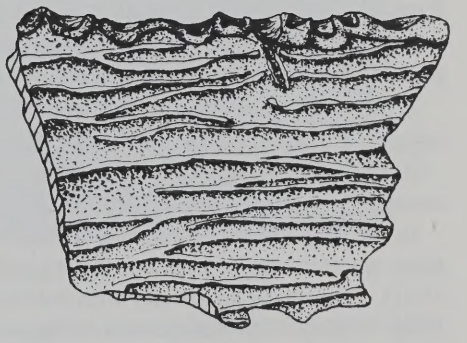
There is in Posey County in extreme southwest Indiana one of the largest Middle Woodland settlements to be found in eastern North America (Kellar 1979). This village/ceremonial complex extends for more than a mile along a high terrace bordering the floodplain of the Ohio River. Though a century and a half of cultivation has altered the surface configuration of the site, several burial mounds are still visible, and aerial reconnaissance has revealed other earthworks features. Sixteen such features have been identified. The largest of these, a partial rectangular enclosure defined by a low earth wall, is about 2,000 feet in length; a similarly constructed square enclosure is symmetrically placed to the north of the above and measures about 1,000 feet on each of its



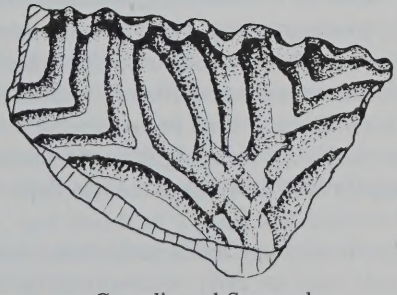
Clay Figurine



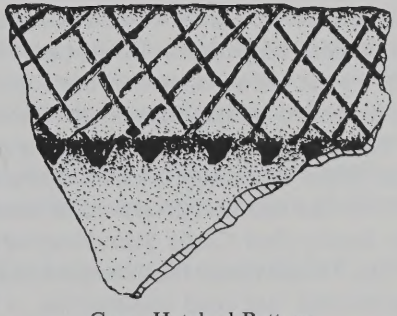
Rocker Stamped Pottery



Simple Stamped Pottery



Complicated Stamped Pottery



Cross Hatched Pottery

Middle Woodland Pottery

sides. Other enclosures are present, including a small C-shaped one. The largest of the ten mounds is nearly 300 feet in length and over 12 feet in height.

Excavation in several of the mounds in the late 1800s produced several burials and artifacts, though the sketchy notes do not provide detailed information. Copper, marine shells, beads, and bracelets were apparently recovered. Excavation records by another investigator report a log tomb in one of the mounds and burial associations in the form of split and drilled bear canines, copper ear spools, freshwater pearl beads, a marine shell container, cut mica, a boatstone, and stone spools, all of which may be duplicated in other mounds of the Middle Woodland period.

The village site is of particular interest, not only because of its unusually large size, but also due to the extremely rich material culture present there. Excavation by the Indiana Historical Society and Indiana University has as yet produced no evidence for housing, but the raw material/artifact complement is impressive. In addition to the use of locally available flint, bone and shell, Ohio flint, marine shells, jasper, mica, and obsidian from more distant places are encountered. There is a well-developed flint industry, including the manufacture of great numbers of thin flake knives or bladelets from prepared cores. Pottery is typically cord marked or plain, but a great variety of stamped and incised wares occur, and some painted pottery is present. Particularly striking is the occurrence of a distinctive decorated pottery made by pressing a carved paddle on the surface to produce aesthetically pleasing curvilinear and rectilinear designs. Such pottery is common in the southeast but extremely rare in our area.

While the subsistence remains from the site indicate the major reliance was upon naturally occurring plants and animals, cultivated squash is also present.

A series of radiocarbon dates from this extremely interesting and important site suggest an occupation at about A.D. 300.

In the Kankakee River Valley in northwestern Indiana eastward to at least Kosciusko County, there are numbers of habitation sites and there were at one time many burial mounds (Quimby 1941). These have an affinity with the Havana Tradition, whose primary center was in the Illinois River Valley. The camps and villages tended to be small in size and were not intensively occupied. These in all probability were seasonally occupied, which reflected the cyclical availability of food resources in the northern lake and moraine region.

The mounds, most of which have been destroyed by cultivation and indiscriminate digging, often occurred in groups. The early records suggest that burials placed in subfloor pits beneath the mounds were a common feature. Artifacts in association with the human interments included the definitive Middle Woodland zoned-stamped pottery vessels, cut animal mandibles, broad cornernotched projectile points (Snyders), plain and effigy platform pipes, marine shell containers, a great variety of ground stone artifacts (celts, gorgets, and spheres), shell and copper beads, mica, drilled animal canines, and additional artifacts made from copper and other raw materials.

There are in east-central Indiana a number of unusual sites. Recent work in these contexts by Ball State University archaeologists have succeeded in clarifying their significance (Swartz 1976). The two best preserved of these are located on state property in Mounds State Park and the former New Castle State Hospital grounds.

The Mounds State Park complex (Kellar 1969) at one time was comprised of more than a dozen earthworks, but road construction, a housing development, and an early recreational facility destroyed some of these and obscured others. The largest of the surviving earth structures is circular in plan and about 360 feet in diameter. It was formed by first excavating a trench to a depth of 9 feet, and the removed earth was then cast to the outside of the arc. This circular

"The Great Mound," Mounds State Park

embankment was approximately 6 feet in height. The central enclosed platform measured 140 feet in diameter. A narrow "causeway" to the southwest permitted access to the central platform through a ground-level opening. A small burial mound was constructed near the center of this feature.

The same construction pattern is exhibited by one large rectangular and two other circular enclosures.

Excavation of the mound in the largest circular enclosure indicated it had been constructed in two phases. The first was composed of three superimposed heavily burned clay floors raised in platform fashion on the original ground surface. A thick mantle of earth subsequently covered these burned areas. The major feature associated with this second building phase was a log tomb in which there were a disarticulated human burial and a cremation. Also, two flexed burials were encountered at different points in the upper portion of this earth mantle. Artifacts recovered from burial association included drilled effigy bear canines carved from bone, mica, a plain platform pipe, and sherds of a plain and distinctively incised pottery.

Two radiocarbon dates from the site, though they are not entirely consistent, are 60 B.C. and A.D. 230.

The New Castle State Hospital site (Swartz 1976) is located about 20 miles southeast of Mounds State Park, and the two are similar in many respects. Of the dozen mounds making up this group, at least six, possibly eight, were circular enclosures with ditches and external embank-

ments. The largest of these mounds was comparable in size to the "great circle" at Mounds State Park and may have had a central mound on the enclosed platform as well. Unfortunately, this tumulus and four others were destroyed by hospital and road construction.

One of the more prominent prehistoric features at the site was a large mound about 215 feet in length and with a maximum width of 100 feet. A shallow trench, somewhat constricted near the center, circumscribed this large structure. This last and the two mound peaks provided good evidence that two major mound masses were represented which had been joined at their margins to form a single structure. Excavation succeeded in locating a number of burials which were interred in a variety of ways: extended, secondary, and cremation. Among the associated artifacts were a broken platform pipe, copper effigy bear canines, cut lynx jaws, a marine shell container, mica, and a pottery vessel.

Both Mounds State Park and the New Castle Hospital sites have produced a pottery complex defined by tastefully incised fine line designs in the form of chevrons and nested diamonds. A notable exception was the single mortuary vessel at New Castle which had rocker stamped elements arranged in zoned areas. This is a typical Middle Woodland motif and its nearest counterpart is in the Kankakee Valley. However, the distinctiveness of the other ceramics and the earthwork features distinguishes the complex from other Middle Woodland manifestations in Indiana. It has been referred to as the New Castle Phase (Swartz 1976:61). However, it is obvious that there is some sharing of burial ceremonialism with other manifestations in adjacent states.

The New Castle Hospital site has been dated to A.D. 40 by radiocarbon.

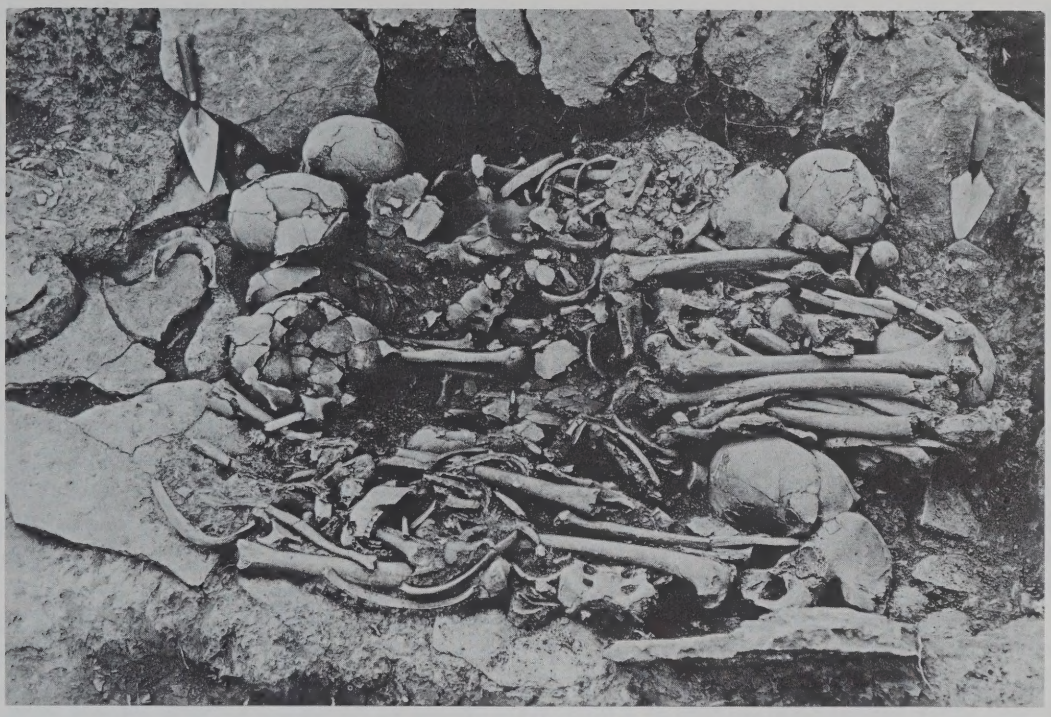
Middle Woodland in southeastern Indiana is poorly known, but the Oberding Site (12D25), Dearborn County, undoubtedly dates to that interval (Black 1934: 196-99). Comparable in some ways to Fort Ancient and Miami Fort nearby in Ohio, it is located on a high bluff overlooking a major river valley and has a walled structure constructed of earth and limestone slabs. A number of seeming burial mounds are associated with it along with abundant habitation debris.

In many ways the Indiana microcosm is typical for Middle Woodland throughout the eastern United States in that there are a number of locally identifiable cultures that share a limited number of distinctive characteristics, particularly those that are associated with interment practices. Undoubtedly temporal differences play a part in accounting for this variation, but local resource availability and ties with nearby groups are also factors.

The definition of Late Woodland is partially based on negative characteristics. That is, the special features of culture that accentuate Middle Woodland and give it its distinctive quality are either markedly attenuated or disappear in their entirety. The large earthwork complexes were no longer constructed. Burial mounds, though they continue to be built in some areas, are much less elaborate and often appear to serve as general cemeteries. The exotic raw materials imported from distant places are absent indicating that the trade relationships are terminated, and the craft specialization implied by the artifacts made from these materials also diminishes. The Late Woodland material culture in specific instances is utilitarian in nature in large measure. At the same time, plant cultivation begins to make a more significant contribution to subsistence.

Archaeologists, puzzled by this profound change in Woodland culture at about A.D. 400, have offered a number of explanations to account for it. Though most of these are unsatisfactory because they are incapable of being directly tested in the archaeological context, a brief summary of some of the proposals is of interest.

One recurrent idea is that the technological/subsistence base was ultimately insufficiently



Stone Mound Secondary Burials, Dearborn County

productive to support the native institutions responsible for maintaining the trade and social stratification inferred from the burial situations. Another related proposal suggests that the system itself became so complex that further elaboration was impossible. A third hypothesis is that Middle Woodland populations were displaced by intruders into the area; the hilltop forts, such as the Oberding Site, are cited as evidence for the struggle that must have ensued. This proposal is obviously allied with the earlier explanation of the "mound builder" demise, but this assumes that American Indians are both the intruder and the ones displaced. The evidence for this is unimpressive, particularly when it is recognized that these so-called "forts" were not well-suited to serve as defensive structures. Another suggestion is that adverse climatic conditions affected agricultural productivity resulting in the society's inability to maintain itself. A contrasting view, given that agriculture seems to have an increased importance during Late Woodland, is that cultivation and its productivity ultimately eliminated the control of food resources which was at the base of the Middle Woodland social status system. Whatever the causes may have been, and there is no question that profound cultural changes did occur, archaeologists have yet to explain them.

In southeastern Indiana, the many small mounds largely composed of limestone slabs and located on the crests of bluffs overlooking the Whitewater River and lesser streams are probably Late Woodland in affiliation (Black 1934:171-260; Kellar 1960). These tumuli commonly contain well-defined central cists outlined with stone in which there may be a number of disarticulated

human skeletons. Though the contexts are reminiscent of the more complex Middle Woodland inhumation pattern, the associated artifacts are few in number and not very distinctive in form. These mounds appear to be associated with the Newtown Phase (Reidhead and Limp 1974). The settlements associated with this Late Woodland phase are agriculturally based, and the small villages are intensively occupied. In addition to a rich material complex, the ceramics are extremely well made, cord marked, and have distinctive sharp angular shoulders.

Allison-LaMotte (Winters 1963) is a cultural expression encountered in the middle Wabash Valley that may be Late Woodland, also. Indiana State University, Terre Haute, has spent several seasons investigating the Daughtery-Monroe Site in Sullivan County, an Allison-LaMotte village (Clouse *et al.* 1971). A number of radiocarbon dates have been obtained and an average occupation date of about A.D. 400 has been determined. While this date may be a bit early for Late Woodland, the material complement and the increasing importance of plant cultivation suggest such a placement. The larger settlements often have a number of oval-shaped dwellings which are sometimes arrayed in a circular pattern around an open plaza. The typical Lowe Flared Base projectile point is well made, thin, and has a flared stem. The dominant ceramic decorations are southeastern in origin and are simple stamped and check stamped. The former is defined by the presence of broad, flat, closely spaced grooves applied using a wooden paddle wrapped with thong-like material. The latter are reminiscent of designs made by the common waffle iron: a series of precisely placed square depressions.

Yet another Late Woodland culture in the Wabash Valley is the Albee Complex (MacLean 1931). Named for the Albee Mound in Sullivan County, the excavation of which was one of the first excavations in Indiana during the modern era of archaeological research, the site was actually a high sandy natural knoll utilized as a prehistoric cemetery. Artifacts recovered include bone harpoons, shell beads, bone awls, antler flaking tools, rectangular slate gorgets, and a variety of flint tools. The typical pottery is grit tempered and cord marked and has a distinctive wedge-shaped or cambered rim. Fabric impressed pottery is associated with Albee, also. The ceramic complex is found on numbers of village sites in the region.

Late Woodland is not well defined in other portions of the state. However, the widespread occurrence of pottery vessels with heavy corded design elements and well-defined collared rims in the northern sectors suggests the presence of these populations.

Summarizing, the *Woodland Tradition* is a development out of the *Archaic Tradition* which is defined by the first appearance of pottery. However, there also is some change in the subsistence practices at this time. While its most visible trend relates to the development of a specialized ceremonialism involving but not confined to funerary ritual, there are occurrences of a more fundamental kind in technology and in the nature of society. Among the former, in addition to pottery, the bow and arrow is introduced, and plant cultivation gradually increases in importance. These in varying degrees contributed to the possibility of an increased population size and, in some areas, larger local concentrations. Though the specifics of societal organization are not readily perceived through archaeology alone, the large mounds and earthwork complexes, trade, and craft specialization are all indicative of an ability to organize co-operative activities on a significant scale. This and the motivations for the long-term use and accretion of the ceremonial complexes certainly must reside in a form of institutional control that transcends the small kin group. Woodland reached its apogee in cultural complexity in the first centuries following the beginning of the Christian Era and then declined. The factors contributing to the ultimate breakdown of the system cannot be identified at present.

The Mississippian Tradition

The *Mississippian Tradition* climaxes in what is the most complex of the prehistoric cultures identified in North America. Unlike the Woodland apogee, whose most visible elements were confined to a limited and somewhat esoteric aspect of culture, the Mississippian peak is reflected at many levels from the commonplace to the specialized. Also, elements of the tradition persisted into the period of European exploration and settlement; therefore, limited insights were gained through direct observation, especially in the southeastern states. Such historic Native American ethnic groups as the Chickasaw, Cherokee, and Natchez reflected the Mississippian life-style.

The Mississippian peoples in most areas were dependent upon maize, beans, and squash, which were intensively cultivated. These were combined with native plants and animals to provide an abundant and varied food supply. Tobacco was also grown. Settlements were permanently established, and there is evidence of town planning in the distribution of houses within their communities, the preservation of open plaza areas, and in the arrangement of the flat-top mounds that served as elevated platforms for siting large community buildings. Some of the larger towns were over a hundred acres in size and these must have had populations of well over a thousand people. Cahokia, the largest such settlement in North America and located in Illinois across the Mississippi from St. Louis, has been variously estimated as having a population of between 20,000 and 40,000.

The raw materials exploited differed little from those commonly used for millennia by the American Indian, but the bone, shell, and stone, and the ceramic complex were extremely varied, and artifacts occur in abundance. The emergent synthesis is one that recognizes considerable social stratification with social control being vested in institutions having a religious-political function. It is probable that the larger Mississippian towns exercised hegemony over the many nearby smaller farmsteads in many instances.

At one time, before the advent of radiocarbon dating, it seemed that Mississippian appeared with relative suddenness at a very late time in the central Mississippi Valley. This interpretation, combined with what was interpreted to be a strong infusion of Middle American elements, suggested that the genesis of the tradition might rest in the actual migration of populations from Mexico. However, the substantial distances involved and the absence of confirming evidence in many of the areas through which the migrating group(s) would have had to pass made that explanation improbable. More recently, the abundance of radiocarbon dates for the *Mississippian Tradition* have succeeded in clarifying the issues.

Mississippian becomes apparent in the archaeological record in the central Mississippi Valley at about A.D. 7-800. Some of the very earliest elements reflect styles and practices that have a long history in eastern North America, including some that may persist from Middle Woodland. A significant factor that contributed to the rise of the tradition, however, was the development of more efficient subsistence practices. These seem to have occurred in combination with or were a direct result of the introduction of a new variety of maize ideally suited to the environmental conditions of the area. There is also the inescapable fact that influences from Middle America did have a role, though traits such as the platform mounds, architectural styles, plazas, and elements of the pottery complex were reinterpreted and modified in the local setting. By approximately A.D. 1150 to A.D. 1200, a distinctive culture type was created and adopted throughout much of eastern United States, and it influenced the surviving Woodland cultures in the peripheral regions.

Though Indiana was not central to the Mississippian development, the emergent qualities that characterize its beginnings can be found at a number of sites in the state. The Yankeetown

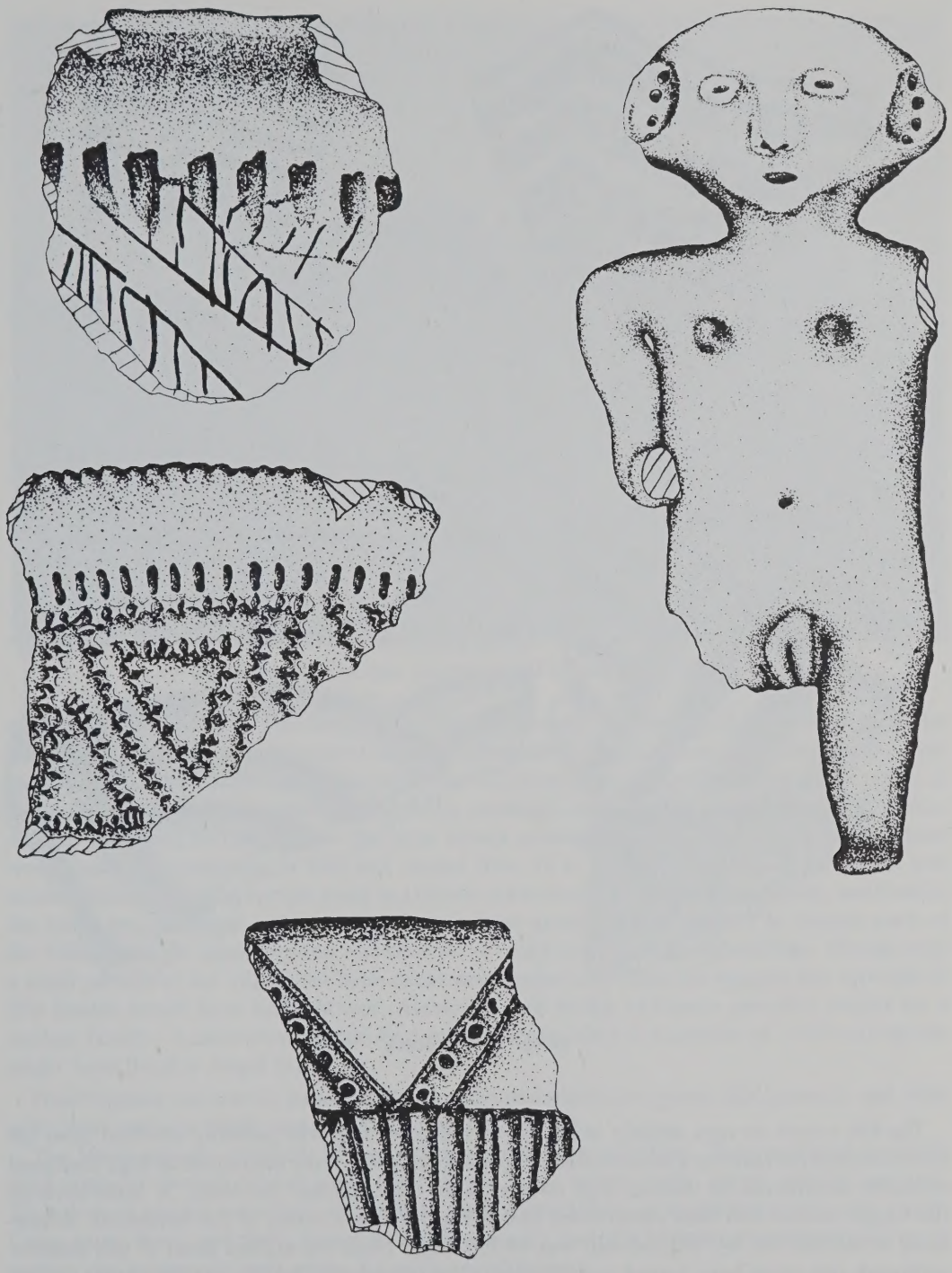
Site which serves as the type site for the similarly named phase is the best known of these.

The Yankeetown Phase is confined to a relatively small area in southwest Indiana and the adjacent portions of Kentucky and Illinois. Though excavation by Indiana University at the type site in Warrick County failed to identify any evidence of architecture, much other information was recovered. The subsistence pattern, in addition to locally available plants and animals, included agriculture as attested by the presence of charred maize. The ceramic complex is reminiscent of Woodland in many ways, including the customary conoidal based jars and the high frequency of cord marked vessel surfaces. On these bases alone, Yankeetown might logically be classed with Late Woodland. However, in addition to some unusual wide mouth bowl forms, there are other atypical decorative motifs. Among these are systematically placed notched appliqued clay strips regularly arrayed near the vessel orifice in geometric patterns. Also, fine line incising with a small pointed instrument produced tasteful design elements. The artifact complement includes an unusual fusion of elements. Those with a Mississippian character include small stemless triangular projectile points, pottery discs, pottery trowels, stone discoidals, and distinctive flattened terra cotta figurines. The extreme localization of the Yankeetown Phase, the unique ceramic complex, and the seeming fusion of Woodland and Mississippian artifact traits are suggestive of the kinds of cultural experimentation going on at about A.D. 900, the radiocarbon date for the phase.

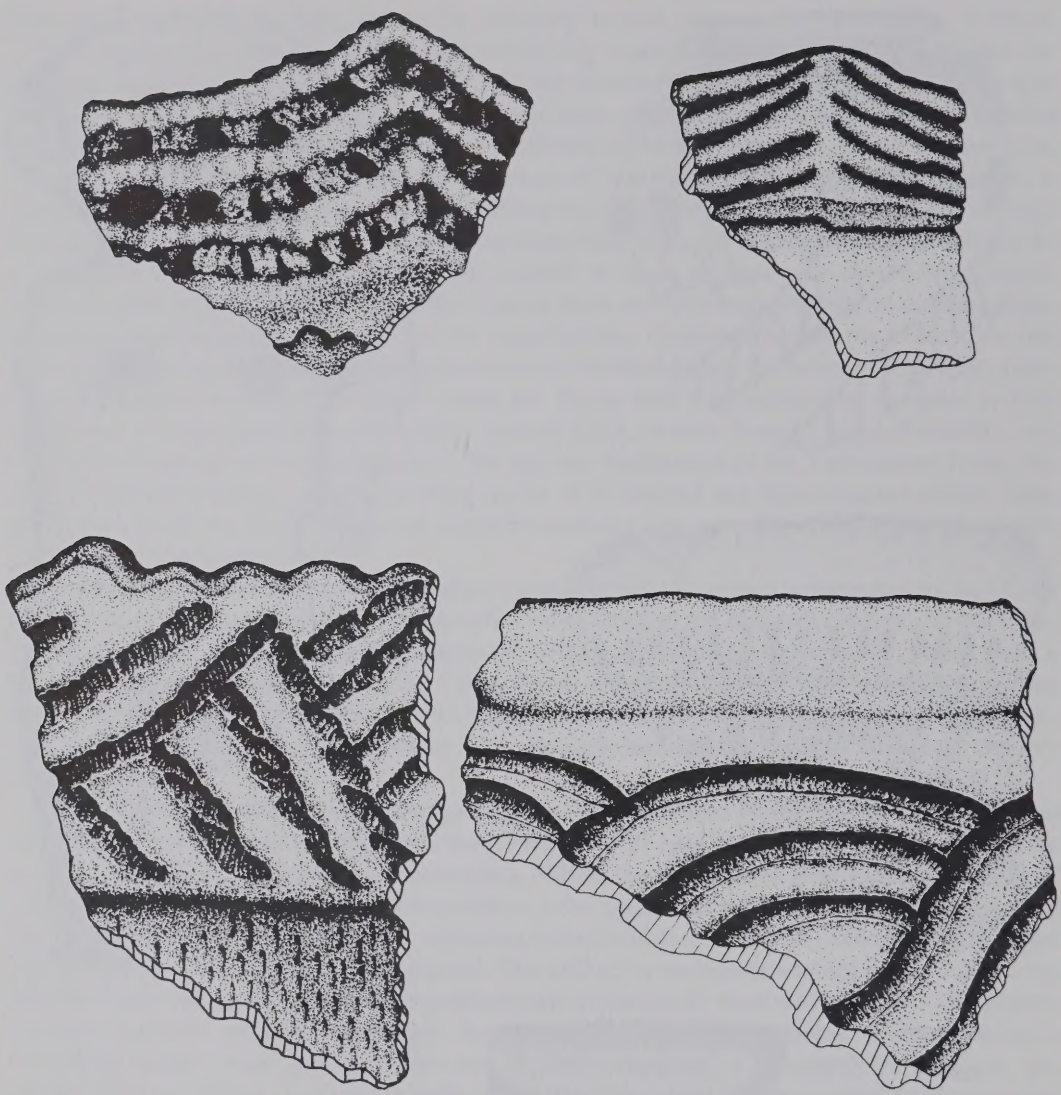
Further indication of the variability and interaction during this period is suggested by the Oliver Phase in central Indiana, which has been radiocarbon dated to the eleventh century. At one time, before the recent urban expansion associated with the growth of Indianapolis, there were a number of large and heavily occupied Oliver Phase villages along the White River. Numerous collections were made from these and one, the Bowen Site, now the site of an apartment complex, was excavated nearly in its entirety by J.C. Householder for the Indiana Historical Society (Dorwin 1971).

The Bowen Site village area was slightly in excess of an acre in size and, though no direct evidence for houses was encountered, the distribution of habitation debris suggested that the central area had served as an unoccupied plaza. Within the village area were many pits, some of which contained human remains; few artifacts were associated with the interments. The food supply was augmented by cultivation, including maize, and deer, shell fish, and other native plant and animal products were heavily exploited. The artifact complement was not highly varied, but included were the small triangular projectile points undoubtedly used with the bow. The pottery complex included elements seemingly derived from a variety of sources. Cord marking, a Woodland feature, was prevalent. The use of shell tempering, a Mississippian attribute, occurred. The curvilinear guilloche, a series of interlocking scroll designs incised in the wet clay around the vessel rim, is more commonly found in the middle and upper Ohio Valley. However, the most common decorative motifs were several patterned variations produced by impressing individual heavy cords on the damp clay, particularly in the rim area, which was often collared. This practice is most frequently encountered in the Great Lakes region. Similar pottery combinations occur from Orange County in the south, where it is associated with earthworks near the Pioneer Mothers State Forest, to, perhaps, the Salamonie River Valley. The point is that the Oliver Phase, with its seeming combination of elements from many sources, reflects something of the cultural foment occurring during the early period of Mississippian development.

The outstanding "classic" Mississippian site in Indiana is Angel Mounds State Memorial located a few miles east of Evansville in Vanderburgh County adjacent to the Ohio River (Black 1967). A brief summary will serve to convey something of its importance.



Yankeetown Pottery and Figurine



Oliver Phase Pottery

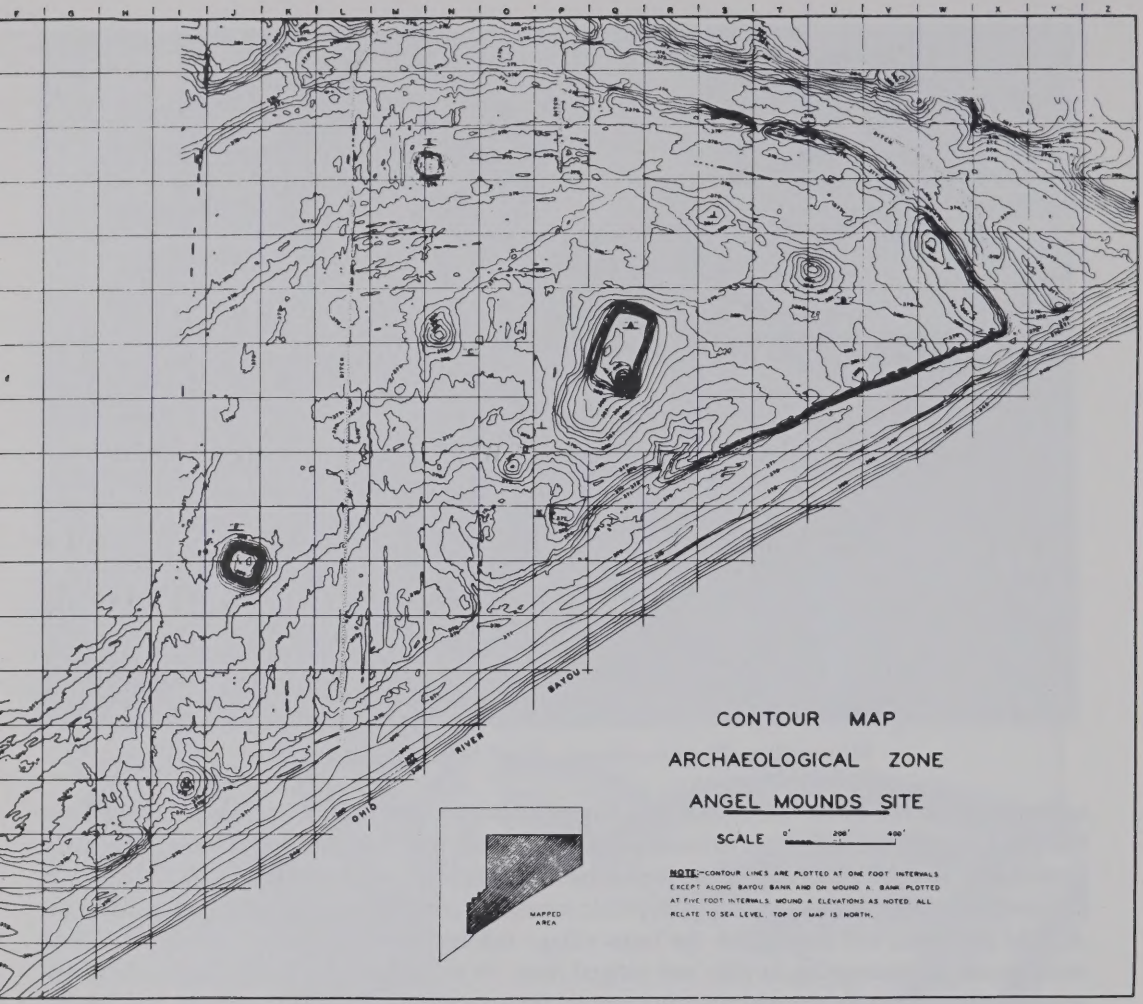
The site covers an area slightly in excess of 100 acres and was probably shielded from the mainstream of the Ohio by a narrow island. Opposite the river, more than a mile of high bastioned stockade constructed of vertical logs covered with clay guarded the town. A three-terraced flat-topped mound had been constructed near the approximate center of the settlement; it measured about 650 feet by 300 feet and was 44 feet high. From the highest point of this massive earthwork one could have gained an overview of the community, and the elevated level surface

Mississippian Platform Mound, Angel Mounds State Memorial

undoubtedly served as the foundation for a large community structure. A number of other similar but much smaller mounds must have served a comparable function. Just to the west of the great mound was an open plaza. Based on the historical description of similarly configured towns in the southeast, the plaza was the scene of public meetings, competition, and religious ceremonies. Around this plaza and throughout the large village substantial houses were constructed. These were square to rectangular in plan and ranged from 16 to 30 feet on a side. Construction was accomplished by setting upright posts in a trench, then covering them with cane mats, and finally, the frame was plastered with clay. The houses were systematically oriented in various parts of the village, and the same location was used for as many as 15 separate rebuildings. Though only a small portion of the village has been excavated, projections from this suggest that upwards of 200 houses would have been present. Assuming each of the structures provided shelter for a nuclear family—5 individuals would be a safe estimate—then a minimum of 1,000 individuals might have lived at Angel Site.

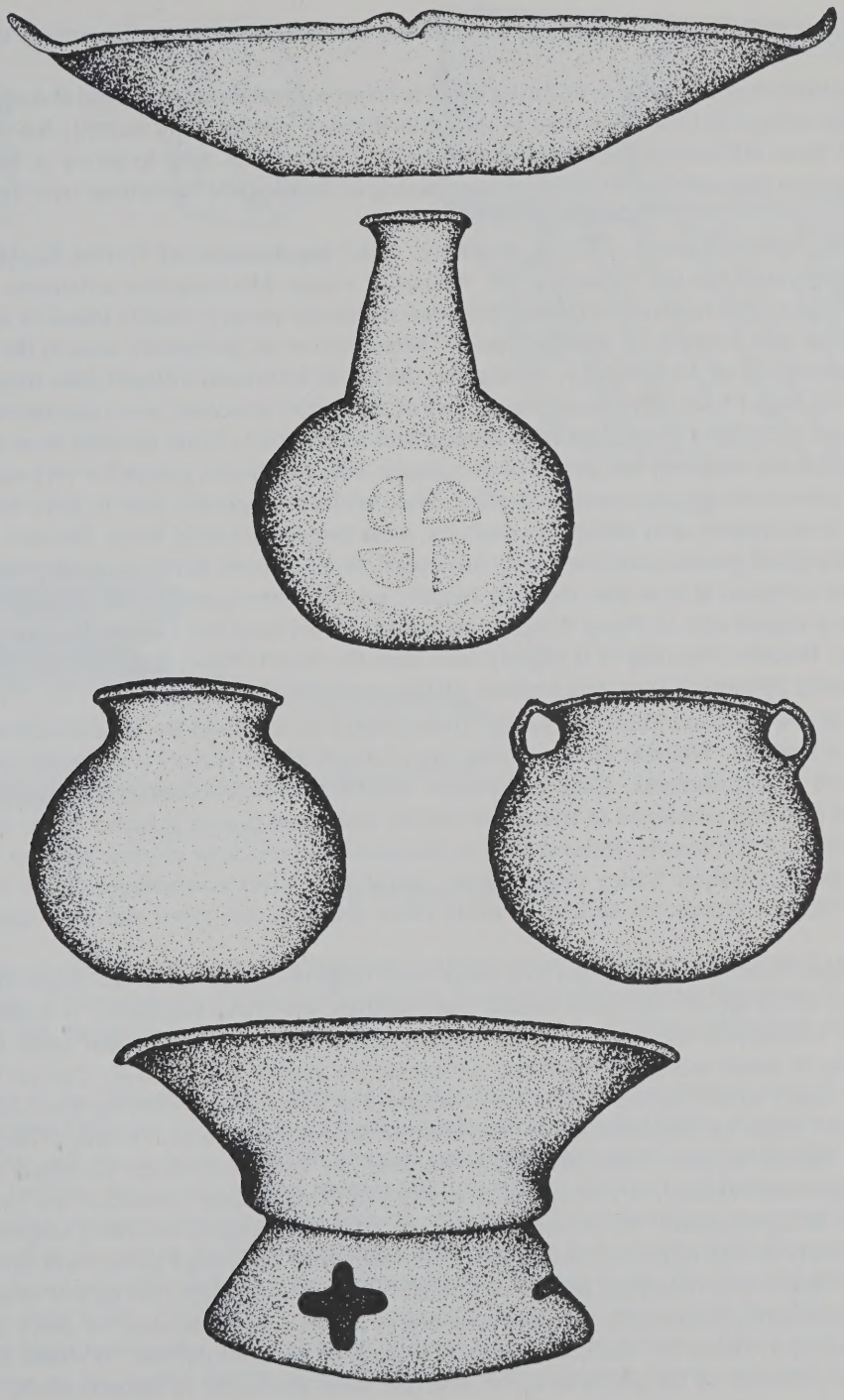
Food reliance was heavily dependent upon cultivated plants, but game, fish, mussels, and other wild plant products made significant contributions to diet.

The Mississippian occupants of Angel Site were skilled craftsmen. They produced excellent shell tempered pottery having many vessel forms, e.g., bowls, pans, plates, bottles, and jars. Though most vessels were plain and without surface decoration, some painted wares were made. Using stone, bone, and shell, numerous tools necessary for daily life were manufactured in great variety and number as were others for personal adornment.


CONTOUR MAP
ARCHAEOLOGICAL ZONE
ANGEL MOUNDS SITE
SCALE 0' 200' 400'
NOTE:-CONTOUR LINES ARE PLOTTED AT ONE FOOT INTERVALS EXCEPT ALONG BAYOU BANK AND ON MOUND A. BANK PLOTTED AT FIVE FOOT INTERVALS. MOUND A ELEVATIONS AS NOTED. ALL RELATE TO SEA LEVEL. TOP OF MAP IS NORTH.
MAPPED AREA
BAYOU
RIVER
OHIO

No known Mississippian town in Indiana duplicates the complexity of Angel Mounds, but there are numerous culturally related sites in the Ohio and lower Wabash valleys. These were undoubtedly "rural" farmsteads that provided support for the main settlement and in return looked to Angel for social, political, and religious leadership.

The Angel Mounds culture complex briefly described above is commonly referred to as Middle Mississippian, a distinctive culture type distributed in the central Mississippi Valley. The manifestations in Indiana seem to appear rather suddenly, probably near the end of the twelfth century, and without significant evidence for prior development in the region. However, as noted above, the Yankeetown Phase undoubtedly contributed in some measure to these later developments. Angel Mounds is the easternmost major Mississippian town in the Ohio Valley, though short-term settlement is represented in some of the Perry and Crawford county rock-shelters, and a few related open sites are recorded as far east as Spencer County and adjacent areas in Kentucky. Additional Angel Phase settlements occur to at least the mouth of the Wabash. Angel Mounds



Angel Mounds Pottery

appears to have been abandoned some time during the fifteenth century for reasons that are not clear.

While Mississippian remains differing in some respects from those recovered at Angel Mounds have been recognized for some time in the Ohio-Wabash valleys, only recently has the significance of these differences been better understood. The methods used to arrive at these understandings also demonstrate the value of maintaining archaeological collections over long periods of time.

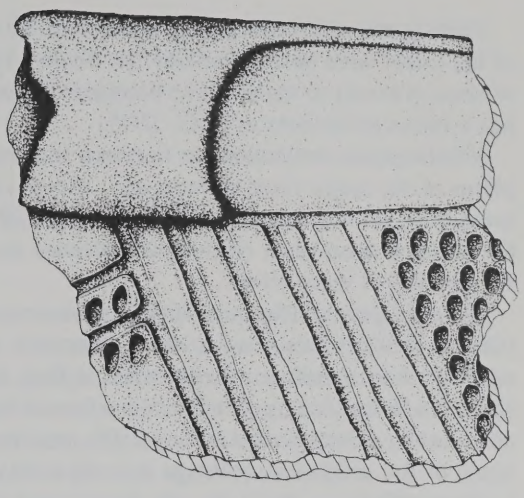
In 1898, as noted above, Phillips Academy, under the direction of Warren K. Moorehead, funded excavations at the "Mouth of the Wabash," a large Mississippian settlement located in Posey County. The material recovered included numerous pottery vessels found in association with burials and a wealth of other artifacts. These are now on permanent loan to the Glenn A. Black Laboratory of Archaeology. Noting that the burial inclusions differed from those encountered at the Angel Site, a systematic reanalysis of the earlier materials was undertaken recently. In addition to defining some important divergences in ceramics, bison remains were identified. This suggested a relatively late period of occupancy, since the bison, except for very early forms, was not present in our area prehistorically. Also, artifacts originally said to have been manufactured from copper, after laboratory analysis, were determined to be brass. Because brass was not an aboriginal product and could only have been obtained from European trade, the site must have been occupied at least into the early historic period. Subsequent research, including excavation at a related site in Posey County, succeeded in defining the Caborn-Welborn Phase in southwest Indiana. Not only is it slightly later than the Angel Phase, there are also differences in settlement patterns (Green and Munson 1978).

The Caborn-Welborn Phase is readily distinguished in the field by its distinctive ceramic decorative features. Whereas the great majority of Angel Phase pottery is plain and only rarely has surface embellishments, Caborn-Welborn ceramics are often decorated with incised and punctated elements combined in triangular motifs, which are placed in broad bands around the upper portion of the vessels. Related sites on occasion produce other ceramic remains more like those in the Mississippi Valley proper. Also, while the artifact assemblages of the Angel and Caborn-Welborn phases are similar in many other respects, site types and their distributions differ.

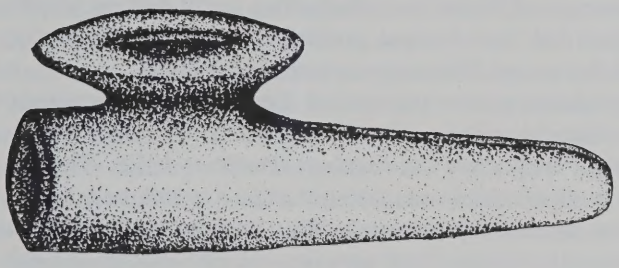
The Angel Phase is characterized by a single very large stockaded town, the Angel Site, in the vicinity of which are several much smaller communities, some also stockaded. It would seem to be a safe assumption that the numerous smaller settlements were dependent upon the larger community in many ways and, together, an interactive system was formed. Caborn-Welborn, however, based on the current evidence, is composed of many sites of varying size, only five or six of which might be classed as major, and none of these are comparable in size to Angel or are currently known to have been stockaded. Because the two populations occupied the same physiographic/environmental setting and seemingly utilized similar resources, the only major difference being temporal, the settlement pattern variability suggests differing adaptive strategies. A clearly defensive posture is reflected in the nucleated settlement pattern and stockades of the Angel Phase. The dispersed pattern of Caborn-Welborn settlement, the lack of evidence for a single dominating community, and the presence of numerous communities of every size, plus the absence of evidence for stockades, suggest a lessened need for defense. It would also seem likely that elements of the political/social structure were dissimilar in some respects, because these requirements in nucleated communities are customarily more specialized.

Projectile Point

Flint End Scraper



Pottery



Catlanite Pipe

Caborn-Welborn Artifacts

While the foregoing might appear somewhat esoteric within the context of a general summary, nevertheless, it demonstrates the kinds of questions faced by archaeologists the answers to which emphasize the importance of knowing site distributions and curating collections over long periods.

Centered in the Vincennes area, there is another Mississippian expression termed the Vincennes Culture (Winters 1963). One such prehistoric community in Illinois is nearly a hundred acres in size and has a dozen platform mounds associated. However, no comparable sites are known in Indiana, though the related Merom Site in Sullivan County is of interest. Located on a narrow ridge top spur overlooking the Wabash, this small five-acre village was protected by an embankment at the narrow entrance to the ridge and may have had as many as five mounds within its limits. Among its other features were depressed areas marking house locations and graves lined with stone slabs (Lilly 1937:49-51). The Vincennes Culture is a much attenuated Mississippian expression made noteworthy by the absence of the more elaborate artifacts. For example, though the ceramics are the typical shell tempered jar forms, bottles, plates, bowls, and pans seem to be absent.

There is one additional poorly understood Mississippian expression in the vicinity of the "Falls of the Ohio" area near Jeffersonville. Known largely from surface collections made at a number of sites, it seems to represent an emergent phase. One of these, the Prather Site in Clark County, has a radiocarbon date of A.D. 1045.

Mississippian settlements in southern Indiana are systematically confined to the broad floodplains of the major river systems and, except for brief periods of occupancy in special resource areas, they do not occur in the hilly portions of the state. This distribution undoubtedly reflects the reliance upon plant cultivation, because the best land for farming is located in the alluvial floodplains of these rivers.

The coeval cultural expression in southeastern Indiana is somewhat loosely called Fort Ancient (Griffin 1943). This occupation is generally confined to a narrow strip in the Ohio Valley eastward from Madison, though typical Fort Ancient pottery has been recovered from a rockshelter in Perry County. It extends northward for an unknown distance in the Whitewater Valley and into the central part of Indiana. The subsistence pattern, house type, stockaded villages, and much of the artifact assemblage is comparable in most ways to that found in Mississippian in southwest Indiana. However, the flat-topped mounds rarely occur. Also, ceramics, while frequently shell tempered and duplicating many of the Mississippian forms, differ in the high frequency of cord marking and by the presence of the incised interlocking scroll designs (curvilinear guilloche). Studies in Ohio suggest that Fort Ancient gradually evolved as the earlier Woodland populations came under the influence of Mississippian cultural practices.

Some late Fort Ancient sites have produced minor amounts of European trade materials indicating that it persisted into the early historic period.

In northern Indiana a somewhat different adaptation was required (Faulkner 1972). Though plant cultivation was certainly practiced, it apparently was not as productive a technique as in the south. Therefore, there was a much greater dependency upon naturally occurring food resources and some greater mobility was required to utilize them. Sites were generally smaller than in the south, and they often reflect shorter periods of occupancy which is undoubtedly related to the seasonal availability of the food resources. The artifact inventory, as one might expect, displays affinities with that in the nearby Great Lakes area. Even here, however, pottery and projectile points reflect some of the almost pan-eastern characteristics associated with Mississippian.

Prehistory and the Historic Indian

Ideally, we should now be in a position, after summarizing 12,000 years of Indiana prehistory, to relate all of this to the historic American Indian occupants in the state. Certainly, one of the goals of archaeology is to identify specific ethnic groups and reconstruct their evolution and development through past time. And one of the questions prehistorians are most often asked is whether specific artifacts represent the work of the Miami, Potawatami, etc. Actually, at least at this time, no answers can be provided. The explanation for this inability is simple.

Various bands of the Miami and Potawatami, all Algonquian speakers, are historically recorded to have lived in a major portion of what is now Indiana. Other residents included groups of Shawnee, Delaware, and members of other ethnic groups. All of these without exception were late migrants into the area. For example, it was not until the late seventeenth century that the Miami apparently moved southeast from Wisconsin and Illinois into northwestern Indiana. The Potawatami were somewhat mobile and were gradually pushed westward from the Lake Huron area by European incursions and did not seem to have settled in Indiana until early in the eighteenth century. The Delaware were not a force in our area until the middle of the same century. And at least some of the Shawnee seemed to have moved over much of the eastern United States during the early historic period before returning to what may have been their earlier Ohio Valley homeland. On occasion the Fort Ancient culture briefly described above has been proposed as being derived from Shawnee ancestors.

It becomes obvious that the known American Indian occupants came into the state from other areas at a very late time and even though some of them might have lived here earlier, there is no present way to relate a fully prehistoric site or culture to a specific ethnic group given these circumstances.

One potential solution to the dilemma is obvious: locate an historic site whose ethnic occupants are identified and once this is accomplished, excavate and study the resultant collections with the aim of tracing the styles represented back in time. This has been attempted, and the excavations at Ouiatanon, an eighteenth-century French trading post located on the Wabash River near Lafayette and which served the Wea and others, were partially predicated on that basis (Kellar 1970). Two seasons of work produced five triangular points and a handful of cord marked pottery sherds. In contrast, there were literally thousands of glass beads, brass arrow points, pipes of European manufacture, and French gun flints, duplicates of which were distributed over most of North America as a result of trade with American Indians. Those items of aboriginal manufacture that might have been stylistically unique to a specific ethnic group had long since been replaced by artifacts made from glass, brass, iron, flint, silver, and stone, all European imports specifically made for exchange and which soon replaced items of aboriginal manufacture.

In sum, to relate prehistory to history requires that American Indian ethnic groups be identifiable through unique house styles, pottery, tools, or other material objects accessible to

archaeologists. However, in Indiana, no such body of data exists, or is it likely to be recovered, since the historically documented groups were late migrants into the region. And by the time they had entered the state the native material culture had been all but replaced by items of European manufacture. The archaeologist/historian is faced with an impossible task in the quest for ethnic identifications in Indiana.

Conclusions

There has been a tendency to view the American Indian as an anachronistic element in the inexorable move towards the ultimate European domination of North America. The native peoples, particularly those in the eastern United States, were thought to be so abjectly inferior and insensitive that even their earlier monumental earthworks were interpreted to represent the handiwork of a prior intellectually superior people, probably ultimately derived from an Old World heartland. Such interpretations, if they were ever warranted by evidence, grew out of the fact that Indian history was traditional and not written and by the time the European intruder began to seriously record the native cultures, they had already been so decimated as to have a reality only in the memory of the oldest generations.

The prehistoric perspective which archaeology permits, while limited to those aspects of culture and behavior likely to survive natural forces, results in quite a different picture than that suggested by the popular stereotype. Beginning sometime prior to 12,000 years ago, a widespread hunting base (*Paleo-Indian Tradition*) underwent a slow transition until the Indian groups became skilled in the utilization of the many varied and rich natural resources. This relatively long period of development (*Archaic Tradition*) occurred when the climate associated with the Pleistocene, the Ice Age, was ameliorated, and conditions approximating those of the present were established. Mortuary ritualism, so conspicuous a part of the archaeological record from the first millennium before the Christian Era to about A.D. 400, is an outgrowth of this experimentation; a particular peak was reached in Ohio (*Woodland Tradition*). Following a short period of relative quiescence, at least in so far as the archaeological evidence is concerned, developments in the Mississippi Valley involving a major reliance upon plant cultivation and undoubtedly influenced in some measure by the "high" cultures of Middle America gave rise to large settled town populations (*Mississippian Tradition*). This life-style survived into the period of European settlement, though the area of Mississippian domination was much diminished by this later period, and some regions were actually depopulated, e.g., the Ohio Valley. Indiana shares in these developments and preserves a host of archaeological sites reflecting upon them.

Appendix A
Help!

Knowledge about prehistory and much of the history of the early European settlement of Indiana relies upon information yet to be identified and recovered from the ground. There are literally tens of thousands of potentially important archaeological sites in the state, but 50 years of concerted effort has succeeded in locating only about 14,000 of these, and many areas in the state are virtually unknown. The remainder will continue to be unidentified if we are totally dependent upon the efforts of the few archaeologists and their limited resources. Therein resides a monumental problem.

Our society has created a technology that can change the landscape almost overnight, and it has been estimated that within another 50 years not a single area in the United States will be untouched by construction of one kind or another. One consequence will be the destruction of almost all the archaeological resources upon which we depend for understanding the past. There is, then, a real urgency in setting about now to record and study these sites so that informed decisions can be made concerning the conservation of information and the preservation of the most significant of these sites.

As has been noted above, there has for sometime been an acute awareness of the need to undertake these tasks and federal and state governments have legal bases for protecting sites and insuring that they are investigated before destruction occurs. Numerous Indiana businesses have co-operated in these efforts. However, despite all the activities, much construction is not covered by the laws affecting historic preservation, and literally hundreds of sites are destroyed each year without a record being made of their presence or content.

You can make an invaluable contribution in the effort to preserve this record! If you know of sites, become aware of situations where artifacts or human burials are uncovered, or encounter questionable situations of possible archaeological relevance, contact the archaeologist at any of the following institutions. By so doing you provide the needed assistance to conserve a rapidly disappearing and irreplaceable historic resource.

Ball State University, Muncie 47306
Archaeology Laboratory
317-284-4927

Division of Historic Preservation and Archaeology
Indianapolis 46204
State Museum
202 North Alabama
317-232-1635

Indiana State University, Terre Haute 47809
Anthropology Laboratory
812-232-6311 ext 2574

Indiana University, Bloomington 47405
Glenn A. Black Laboratory of Archaeology, 9th and Fess Streets
812-335-0022

Indiana University-Purdue University, Fort Wayne 46805
Department of Sociology and Anthropology
219-482-5461

University of Notre Dame, Notre Dame 46556
219-239-5645

Appendix B
Museums and Sites

Nearly all archaeological sites are located on privately owned property and are not generally accessible to the public for that reason. However, there are two publically owned sites in Indiana and others in nearby states that are preserved and interpreted. Also, several museums have educational displays based on prehistoric collections.

Angel Mounds State Memorial

Angel Mounds is located about four miles east of Evansville and one mile south of State Road 662 on Pollack Avenue. It was a large *Mississippian Tradition* town. A modern interpretive center has exhibits based upon the twenty-seven years of excavation there, and trails over the site lead the visitor through the town and past reconstructions of typical houses, the stockade, and a large structure on one of the earth mounds. Explanatory markers placed strategically provide information about these and other features at this very large site. Lilly Endowment, Inc., made possible the interpretation of the site. Group tours may be arranged by writing Angel Mounds State Memorial, 8215 Pollack Avenue, Evansville 47701 or calling 812-853-3956 at least two weeks in advance. Hours: Sunday and Tuesday 1-5, Wednesday through Saturday 9-5, Free.

Glenn A. Black Laboratory of Archaeology (Indiana University)

This archaeological research facility is located on the Bloomington campus, Indiana University, at the corner of 9th and Fess streets. There is a small museum devoted to the archaeology of the Great Lakes-Ohio Valley areas. Groups may make arrangements for tours of the museum and research facilities by writing the Director or calling 812-335-9544. Hours: Monday through Friday 8-12, 1-5. Free.

Indiana State Museum

The Indiana State Museum is located at 202 North Alabama Street, Indianapolis. Parking is available immediately to the north of the museum. Exhibits include an American Indian gallery that emphasizes both prehistory and the historic Native American in the state. Tours can be arranged by writing the Curator of Education or calling 317-232-4948. Hours: Daily 9-4:45.

Mounds State Park

Mounds State Park is located about two miles east of Anderson on State Road 32. There are no interpretive facilities or tour arrangements, but the park contains a fine *Woodland Tradition* mound group. Particularly notable are several geometric earthworks, both circular and rectangular. Hours: 8 am to 11 pm. Admission: $2 per auto, busses .50 per person. Admission waiver for school groups can be obtained by writing Director of State Parks, State Office Building, Indianapolis 46204.

Fort Ouiatanon Blockhouse

This replica of an early historic blockhouse is located about three miles east of West Lafayette. Although it is not on the actual site of Fort Ouiatanon, the early French post for which it is named, the blockhouse contains a small museum devoted to the early American Indian-European contact period. Many of the artifacts on exhibit were recovered from the French settlement itself. Hours: 10-8, Fri., Sat., Sun., April into November. Free.

Many local museums exhibit collections of prehistoric artifacts. Among these are: Evansville Public Museum; Northern Indiana Historical Museum, South Bend; Tippecanoe County Historical Museum, Lafayette; and the Allen County-Fort Wayne Historical Museum.

The State of Ohio has developed its archaeological resources in a particularly effective manner. The Ohio Historical Center, Columbus, north of the business area off Interstate 71, has excellent archaeological exhibits that display some of the finest examples of *Woodland Tradition* craftsmanship to be found anywhere. Also, a number of sites are accessible to the public, and interpretive centers have been constructed. Currently these are open only from late spring into early fall. Among these are: Fort Ancient State Memorial near Lebanon; Flint Ridge State Memorial two miles north of Interstate 70 on Licking County Road 668; Fort Hill State Memorial just off State Road 41 in Highland County; the Newark Earthworks State Memorial on the west side of Newark; the Great Serpent Mound off State Road 73 in Adams County; and Seip Mound State Memorial about nine miles west of Chillicothe on U.S. 50. The Mound City Group, a national archaeological monument just north of Chillicothe is a most impressive site. The Cincinnati Museum of Natural History, 1720 Gilbert Avenue, has a substantial gallery that exhibits material on area prehistory. Similarly, the Dayton Museum of Natural History has prehistoric displays, as does the Cleveland Museum of Natural History.

In Illinois, the Don Dickson Mounds, a division of the Illinois State Museum, located a short distance south of Lewistown, has excellent interpretive exhibits and a partially excavated and stabilized *Mississippian Tradition* cemetery. Cahokia State Park east of Collinsville and directly across the Mississippi River from St. Louis preserves a portion of what was the most populous Indian town north of Mexico, as well as the largest temple mound. A small museum provides further documentation for this very important *Mississippian Tradition* center. Also, the Field Museum of Natural History in Chicago has outstanding exhibits on the American Indian, including impressive examples of prehistoric artifacts from our general area. The Illinois State Museum, Springfield, has major galleries devoted to the prehistoric and historic Native American occupancy.

Appendix C
Archaeology as a Career

Specialization in archaeology primarily occurs in graduate school after a student has earned the baccalaureate degree. However, undergraduate courses in the area are offered at the larger universities, and there are usually opportunities to participate in field work at the undergraduate level. A Ph.D. is a prerequisite for those whose objectives include university teaching, and a minimum of three years of academic work beyond the B.A. is required to attain the degree, but the time is almost always considerably longer. In recent years, an emphasis on historic preservation and the need for gaining compliance with federal and state environmental laws has created a demand for individuals with expertise in archaeology, and the masters degree has become more useful. An M.A. can usually be earned in a year or two after the completion of undergraduate programs.

A student contemplating a professional career in archaeology must at some point determine the geographic area and broad time period that are of basic interest. These decisions are required because archaeology is not identified with a single department in universities in the United States. For example, if one's interests are with the literate cultures of Greece, the archaeological specialization customarily will be found in departments of classic and/or fine arts. The growing concern with Colonial Period materials in the United States has led to the development of specialized programs in historical archaeology; these may be found in American studies concentrations, or history, and sometimes in anthropology. American Indian archaeology is usually within anthropology, and prehistoric archaeology generally constitutes one of the major subdivisions in that discipline. The point is that professional training in the United States is generally not undertaken in a department of archaeology, but degrees are earned within academic disciplines where archaeological activities are utilized in the quest for knowledge.

Prehistoric archaeology is very broadly based and, while its primary concern is with cultures of the past, a focus of the social sciences, the nature of the problems faced by the specialist requires familiarity with a wide spectrum of the natural and physical sciences. The importance of statistics in research and the adaptability of the computer to assist in resolving problems in the field and laboratory makes it desirable to have some background in mathematics and computer science. Depending upon one's area of specialization, facility in one or more languages may be required, also. And because archaeological excavation and the interpretation of the data recovered are meaningless until they are transmitted to colleagues and the public in the form of published reports, writing proficiency is a necessity. In brief, there are few areas of human endeavor that are not applicable to one's work. A writer, himself a prehistorian, has described the personal and professional qualities of the ideal archaeologist as follows (Clark 1957:17-18):

> Much of the fascination of archaeology indeed resides in its many-sidedness. One can safely say that there are few facilities, experiences, or fields of special knowledge that cannot contribute to or are not stimulated by its pursuit. The

> complete archaeologist, if such a being existed, would need to have a genius for travel, exploration, and reconnaissance; to be adept at business and administration, skilled at raising funds and obtaining all manner of permits from authorities and owners, few of whom can hope to gain from his activities, and capable of administering and directing excavations which may well turn out to be large-scale enterprises; to be a competent surveyor, draughtsman, and photographer, so that what he finds can be adequately recorded; to combine a gift for exact description and analysis with a power of synthesis and a flair for journalism; and to have the gift of tongues, or at very least an ability to digest the reports of his foreign colleagues without which his own will lack the authority that only wide reading and comparison can provide.
>
> In addition to all these talents of the market-place, without which even the finest scholarship is likely to prove ineffective in this field, our paragon must be endowed with other qualities of a higher and a rarer order. The fruitful practice of archaeology involves to a unique degree an ability and a willingness to comprehend the aims, methods, and potentialities of fellow-workers in the most diverse branches of both humanistic and scientific study.

The young student planning to specialize in prehistoric archaeology should read as widely as possible. There are a substantial number of relatively inexpensive paperback books that summarize the archaeology of many world areas and outline the methods and techniques used in the field and laboratory. Such commonly available journals as *National Geographic* and *Smithsonian* frequently publish articles of interest. *Archaeology,* a regular publication of the Archaeological Institute of America, and *Early Man,* the journal of the Center for American Archaeology, Northwestern University, report on current projects and findings and are written for the nonprofessional. At a more technical level, *Science* and *Scientific American* can be important sources of information.

Because archaeological sites and collections are common in all parts of the state, it is an easy matter to visit local historical museums and become acquainted with artifact collectors in one's home region. Also, the Wabash Valley Archaeological Society, Indianapolis Amateur Archaeological Association, and Northwest Indiana Archaeological Association, all organizations that encourage a serious involvement in state archaeology, have active programs of lectures and field work, and an individual with serious interest in archaeology can derive enormous benefits from membership.

The high school course program, though archaeology is not offered, should be planned to provide basic background in such diverse areas as language, history, mathematics, geology, geography, biology, physics, and chemistry. English expression is of obvious importance. Also, most high schools have computer hardware and courses for using it effectively. Of course, the program must be designed to meet university entrance requirements.

Assuming an interest in prehistoric archaeology, the university major will likely be in anthropology. Such a major, in addition to providing an opportunity to take courses in archaeology and, perhaps, participating in summer excavations, acquaints the student with the almost infinite variability of human culture and language in all world areas. Human physical evolution and skeletal zoology are also studied. All of these may make direct contributions to an understanding of the materials recovered by the archaeologist. In the large university, additional archaeology offerings may be found in history, classics, or fine arts. And there will be innu-

merable opportunities to take courses applicable to the solution of problems faced in the field and laboratory, e.g., cartography, remote sensing, photography, Pleistocene geology, palynology, etc. Also, the faculty in archaeology is usually involved in research, and the student may have opportunities to provide laboratory assistance as a volunteer.

A few individuals with strong undergraduate records, particularly when much field and laboratory experience has been included, have been employed on archaeological projects that result from historic preservation efforts. However, these are exceptions and do not offer long-term career opportunities.

Entrance into a good graduate program in archaeology is highly competitive and generally limited to those with superior academic credentials. At least a B+ grade average may be required, though other supporting material such as faculty recommendations, work experience, and, particularly, Graduate Record Examination scores may partially offset a lower grade record.

The M.A. degree is not a prerequisite for earning the Ph.D., and if the latter is the ultimate goal, it is generally recommended that one proceed directly to it, though this is not universal. The recent demand for trained archaeologists to participate in a host of projects resulting from federal and state environmental laws has made the master's degree somewhat more viable than in the recent past, and a number of universities offer programs that prepare archaeologists to work in the historic preservation field. Such courses of study, in addition to providing training in archaeological content and field and laboratory methodology, relate one's area of expertise to the complex legal and procedural requirements imposed by federal and state bureaucracies that have grown up around historic preservation. Employment opportunities may be present with branches of the federal government (e.g., National Park Service, Bureau of Land Management, Forest Service, U.S. Army Corps of Engineers, etc.), state government (e.g., highway commissions, divisions of mining, historic preservation offices), and university-based and commercial consulting firms that assist clients who must comply with the legal requirements designed to protect archaeological resources. Beginning salaries are in the range of $14,000 to $16,000 a year.

The Ph.D. degree, the terminal degree in the field and a prerequisite for those contemplating a career in teaching and research in archaeology, will be earned in anthropology, if New World prehistory is of basic concern. While specific requirements will vary at individual universities, in addition to archaeology, the student will usually select an inside and an outside minor. The former represents another closely related emphasis within anthropology, such as cultural ecology or physical anthropology. The latter will be selected from a second discipline that complements the primary interest, i.e., geology, geography, paleoecology, area studies, etc. Many of the courses taken will be seminars in which a student selects a problem, researches it, and presents the results in oral and written form for criticism. Also, participation in archaeological field and laboratory research is expected.

Customarily, additional minimal requirements include a reading knowledge of at least one foreign language and competency in a tool skill. The latter may be in mathematical statistics or computer sciences.

Upon the successful completion of about 65 hours of formal course work, a written examination in archaeology and the two minor fields is given. In some cases, an oral examination may follow. Passing these examinations qualifies the student for Ph.D. candidacy and work can then begin on the dissertation, a significant document representing a major research effort suitable for publication. The degree is granted upon the acceptance of the dissertation by the student's research committee.

It should be emphasized that, unlike the undergraduate degree, the Ph.D. is not granted simply on the basis of successfully completing a prescribed number of course hours. While 90 semester hours are customarily required, this is only a minimal prerequisite, and much hinges on the initiative and professional involvements of the student.

If all of this appears time-consuming, expensive, and sometimes difficult, be assured that it is, but this should not deter the serious student with an interest in prehistoric archaeology. It is through such efforts that expertise is gained and responsible professional positions are filled. While it is possible to complete Ph.D. programs in three years, five years is not uncommon. Also, it is usually possible to partially subsidize expenses through scholarships, teaching and research assistantships, and participation in field projects. For example, most students are employed on excavations during the summer, and faculty working in foreign areas often can take students with them.

Most prehistoric archaeologists in the United States are affiliated with universities where they teach undergraduate and graduate courses and carry out their research. A number of them are also employed by environmental consulting firms. Others have positions with the federal government, large metropolitan museums, and state historical societies.

The beginning salary for a new Ph.D. in a university situation is in the range of $17,000 to $20,000. Appointments are typically on a ten-month basis, and summer teaching or field work would normally add another 20 percent to income.

Several universities in Indiana have departments of anthropology in which prehistoric archaeology is well represented. These are listed below together with the geographic areas in which they specialize and the degrees offered. Details concerning the individual programs can be obtained by writing to the Department of Anthropology at these institutions.

Ball State University, Muncie, Indiana: eastern North America, western Europe; B.A., M.A. or M.S., (Ph.D. or EdD in association with Department of History).

Indiana State University, Terre Haute: eastern North America; B.A.

Indiana University, Bloomington: eastern and western North America, South America, sub-Sahara Africa, Mediterranean; B.A., M.A., Ph.D.

Indiana University-Purdue University, Fort Wayne: B.A. (with sociology).

Purdue University, West Lafayette: Middle America; B.A., M.A., Ph.D.

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